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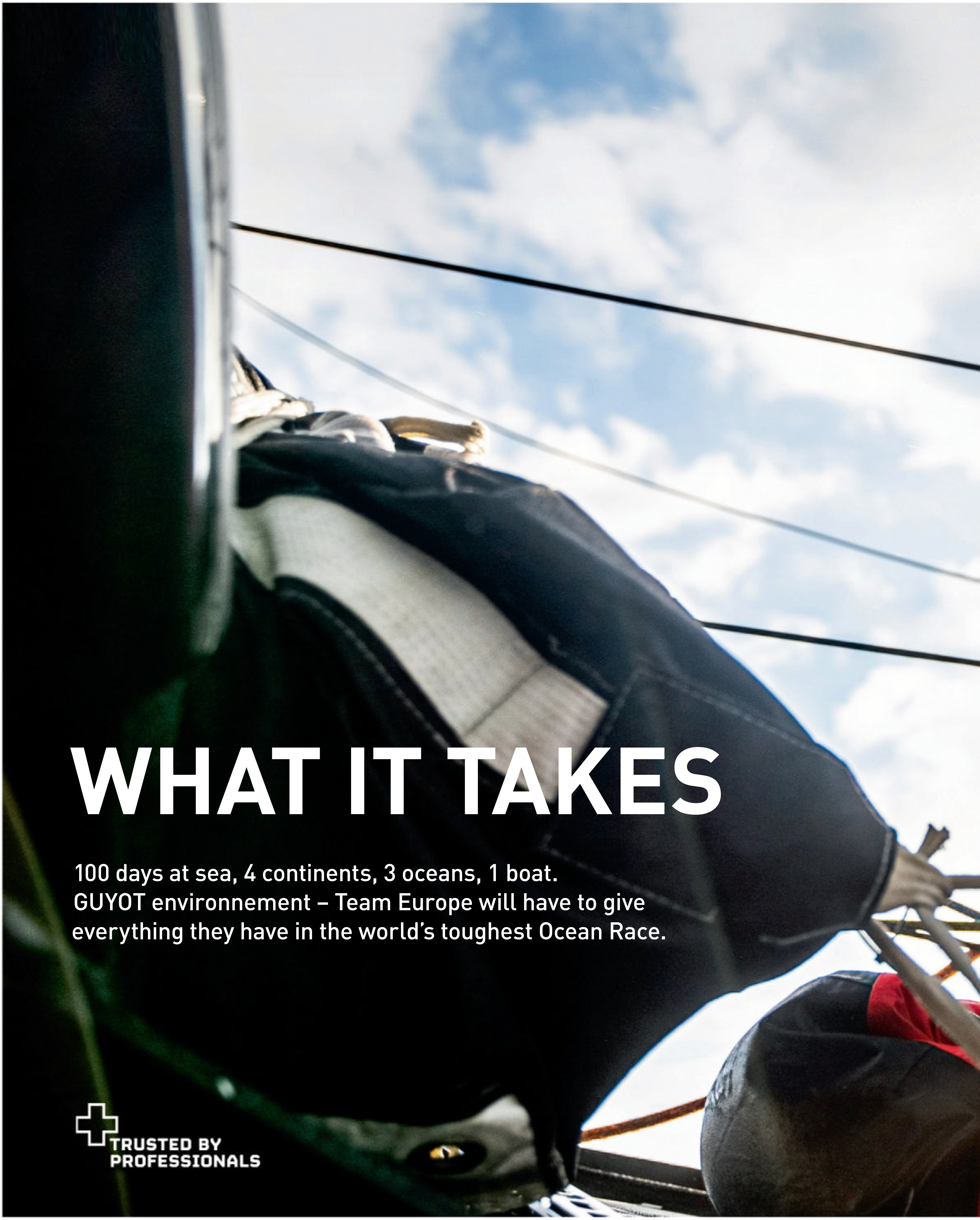

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>
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> "Two minutes into a typical race, the dust has settled, and I am in my lane executing my strategy. It's a good time to pause and look around."
>
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When sailing's worker bees swarm to sunny St. Pete Beach, honey oozes from the hive.

YOU won't get better or win races if you tell yourself you suck at sailing. Or life. Or work. Or while advancing the sport to a better place.

This is the wisdom of professional snowboarder Kevin Pearce, the morning's keynote speaker on the fourth and final day of the 2023 Sailing Leadership Forum. The topic at this particular moment in his talk is about negativity and how it's a barrier to one's personal fulfillment.

Pearce speaks with authority because he has battled his own demons of negativity—from the moment his head slammed into the icy transition of a halfpipe built to launch him to the Vancouver Olympics. The horrific accident, and the traumatic brain injury that resulted, halted his gold-medal quest and detoured him on a long but inspirational journey of recovery. "Focus on the positive" is the point he's hammering home to the forum audience. There are real chemicals in your brain at work when you do. Trust him. He knows the science.

Earlier, Pearce had posed a simple question after he stepped onto the stage: Why would a snowboarder be at a sailing conference? To inspire, of course. That's what good keynoters do, but the real answer would eventually come when he closes with a few important takeaways: Use your brain for good, personally and professionally. Love what you do. Focus on the positive. Pass along the stoke.

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John Pearce, US Sailing's youth competition manager, outlines the various career tracks for youth sailors today.
PHOTO: DAVE REED

And that's exactly what's happening across the sprawling conference center—on the beach, in the breakout rooms, at the cocktail parties, the award ceremonies and the afterhours. For anyone in the business of shaping sailing's future, the biennial gathering is the place to be. This year, in early February, nearly 600 attendees hunker down and get elbow to elbow doing the good work for every level of the sport. Growing it. Promoting it. And living it. In the next seat are officers of yacht clubs big and small, sailing schools new and old, and community sailing centers growing faster than they can manage or afford. There are young and senior race officials, coaches and instructors shop-talking, recruiting, and doing recon for the next great solution. It's four days of learning from each other—immersive enough to make your brain hurt, but that's what the cocktail hours are for.

From the thick fog of a forum week, however, clarity does eventually come once you sit back and take stock of it all. At this forum in particular, there was a real sense of urgency and excitement. Sailing is on fire, and while each of us are immersed in our own little corner of the sport, it's easy to miss all the hustle that's happening across our waterfronts.

The sport is not dying. It's diversifying—rapidly. That's a positive for the future of wind-powered sports. It's a great time to be a sailing kid. I admit I used to gripe about modern-day junior sailing. It was jealousy, really, of all the coddled kids with parents toting them and their coaches around the country and abroad. Skiffs, kites, windsurfers, wings and foils—come on, now. That's not fair. Youth sailors not only have all the fun boats today, but they also have what you and I did not: professionally organized pathways to anywhere a kid wants to go in sailing and beyond.

Making lifelong sailors is the goal, says John Pearce, US Sailing's youth competition manager, who leads a session at the forum entitled "Youth Racing Pathways." He makes a darn good case for the modern-day performance-racing paths. His flow chart maps out the many ways to progress: Start the kids in Optis or whatever boat you have until they're 14 or so. Then for the next four years, take

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them up a notch to the ILCA 6, Nacra 15 or 29er. Those who don't take to the dinghy pathway can advance to small keelboats and aim for the Sears Cup—the granddaddy of all youth trophies. From age 16 to 20, it's college sailing or a committed tack to the Olympic on-ramp. And if all goes to the Pathway plan, the end of the road is pro sailing, marine careers, coaching, adult racing, race officials and tomorrow's leaders.

The flow is not always fixed or perfectly linear, however, and we know only a select few will sail to the tip of the spear. And that's OK. Pearce's co-presenter at the breakout session, Maxwell Plarr, director of sailing at Virginia's Hampton YC, says he has no interest in fueling directly into the Olympic pipeline. He's happy to let those eager birds fly from his nest early, but his focus is keeping it fun. Over the past few years, he's led a few junior-boat experiments with the support of the club's board of directors, and the results were surprising.

International 420s? Nah. The kids didn't go for it. 29ers? Now, *that* they are into, but it takes a more careful approach to skill development. How about adding a couple of wingfoil setups to the quiver? Oh yes, they did.

"If you don't have a wing in your program," Plarr tells forum attendees, "get one."

Hampton's youth sailing program is healthy, he says, and it's producing top-level keelboat kids too, but he's not doing it alone. He's constantly leaning on the resources at US Sailing, which he says makes his life a lot easier. He's got Pearce on speed dial. And that's cool, says Pearce, because that's what he's there for. It's his, and US Sailing's, responsibility to support every organization.

How US Sailing attempts to serve so many masters is a complicated story for another day and place. The organization is not perfect, but it's trying. And it wants all of us to be part of the progress. Membership revenues are a significant source of income that trickles out to the sailing community. Benefactors and corporate partners are essential too. There are many mouths to feed, but if there's one thing US Sailing want us all to know, it's that it's bent on serving everyone, which is, of course, easier said than done.

Of the estimated millions of sailors in America, only a tiny fraction are dues-paying members, and I suspect you and I know many in our own circles who are not members either. Reasons run the gamut, but the most common is: "There's nothing in it for me."

Be that as it may, those among us who sit on their hands and complain about a lack of available crew, bad race management, unfair ratings, high entry fees and the like have no skin in the game. Kevin Pearce would say: Don't complain if you don't belong, and take your negativity elsewhere. It's not helping.

Belonging goes beyond "what we get" for the $79 individual membership fee. Sure, we get the digital rulebook and partner discounts that will save us the same amount. But it's not the money that's important; it's each of us doing our part to advance the sport to a better place for those who follow. It allows US Sailing to invest in retaining those who walk through the doors of community sailing centers, yacht clubs and sailing schools—organizations that need certified instructors and educational programming. Think of it as a down payment on your future crew pool.

Youth sailors today have many more boat options, including the Nacra 15, to pursue the sport in different directions.
PHOTO: LEXI PLINE/ US SAILING

US Sailing is committed to improving the capabilities of the important offshore office too, which was understaffed and underfunded for far too long. Here, Jim Teeters, head of the Offshore Ratings Office, is getting the house back in order. At Teeters' forum breakout session with Stan Honey—the smartest guy in sailing—they reveal they're working on a tweak to handicap scoring methodology that Honey is certain will create better races, as well as happier owners and tacticians. Applying modern weather forecasting technology, he says, will make handicap racing "more fair and less complex."

Like Pearce and his Youth Racing Pathway, Teeters and Honey also have a flow chart to explain this novel concept of a "forecast time correction factor." With the FTCF, Honey explains, sailors will more accurately know their time allowance *before* the race starts, so they can make better tactical decisions during the race. The forecast part of the FTCF is done by predicting the wind before the race starts using the highest-possible-resolution weather file. In essence, a race committee would estimate the course, enter the polar file for each entered boat, route each boat around the course using Expedition software or a web-based application (to be developed), and deliver "time correction factors" to competitors shortly before the race starts.

This is the sort of stuff we learn at the forum, from two of the most intelligent guys in the handicapping space. They're committed to achieving a better race outcome for you and me, and I argue that this alone is worth a slice of the membership. We can't complain about our rating or the quality of the outcome if we don't invest in the game, and that applies to both skippers and crews. Yes, if you're on the rail and calling the shots, it's to your benefit as well.

One might say that four days neck-deep in US Sailing has me gulping the organization's Kool-Aid, but that's not the case. All we have to do is sit and listen—with a positive mindset—to the many people out there advancing the sport on our behalf. Sailing is on fire because of them, and it's on all of us to help fan the flames.

Take, for example, Jessica Koenig, the outgoing executive director of Charleston Community Sailing (South Carolina), who collects the Martin A. Luray Award at the forum's Community Sailing Awards Luncheon on the final day. Koenig closes the gathering by sharing that she introduced more than 16,000 people to the sport in her time at the sailing center, and "that feels pretty special."

Charleston Community Sailing is but one of many organizations across the country that rely on US Sailing for support in some way, and I have no doubt Kevin Pearce would agree that they're all winning because of it. When it comes to shaping the future of our sport, they're making a positive impact, and they certainly don't suck. ■

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STARTING LINE

Dan Cheresh helms a chartered Cape 31 at the Southernmost Regatta. Cheresh's Extreme 2 Sailing Team, more accustomed to its M32 Catamaran, acclimated to the boat quickly to finish second overall in the five-boat fleet to Anthony O'Leary's Irish Team on *Antix*.

PHOTO: KRISTEN BERRY/GALE FORCE IMAGES

CAPE TO THE STAGE

With a flourishing fleet in Europe, the newest sportboat class debuted in Key West to show what all the buzz is about.

WITH big breeze, blue water and waves, Key West has long been an ideal stage to spotlight the newest grand-prix sailing toys, which now include the emerging Cape 31 One-Design class. At the Southernmost Regatta in January, five crews of these 31-footers marked its North American arrival, and the class stole the show.

The Mark Mills-designed and South African-built sportboat has gained international attention as a high-performance speedster that is competitive in all breeze conditions. "The inspiration for the Cape 31 came from renowned Scottish yacht racer Lord Irvine Laidlaw, who wanted to provide a boost to the Cape Town yachting community with a cutting-edge boat that could be built locally and offer youth sailors a compelling reason to step up to big boats," Mills says. "It needed to offer high performance across the full range of Cape Town conditions, be fun to sail and be robust—all factors that have stood the design in good stead as it expands around the world."

The 31 fleet at the Southernmost Regatta was a mix of European teams en route to winter regattas in the Caribbean and a few charters arranged for potential American owners keen to try before they buy.

"I feel momentum in terms of people talking about the boat," says Dan Cheresh, of Saugatuck, Michigan, who chartered a Cape 31 for the regatta. Cheresh is past president and champion of the C&C 30 One-Design class, another Mark Mills design. "We have the IC37 and the J/70, but I really think that a 30-foot highly technical one-design fleet is something we're missing."

At the core of the Cape 31's success is its versatile design and ability to perform across the wind range—and more importantly, at the upper end.

"Modern hull shapes offer more opportunities to tune the weight and righting moment across the range of heel angles, which means we don't need so much bulb weight," Mills says. "Upright in the light, it's a relatively low wetted surface shape that goes well, but once you start heeling, the righting moment builds quickly to allow you to power upwind or reach like crazy. Then it's just a question of finessing the right amount of sail plan onto that platform—not too much, so you don't overpower too early, and not too little to make sure the boat is fun all the way through the wind range."

The intricacy of the design places a premium on teamwork, communication and boathandling to be competitive in the fleet. "I think one of the reasons that everyone is interested in the boat is that it's highly technical—it takes a lot of coordination to sail," Cheresh says. "If there's anything I learned, having no experience on the boat, it is that you have to recognize the importance of the relationship between the jib trimmer, the main trimmer, the helmsman and the runner. All those people have to be aware of the difference that's occurring with pressure, whether it be a puff coming in, a light spot, or a left or right shift. If a guy on the rail calls a puff and waits for the mainsail trimmer to process it, and then calls for a runner and jib change, you've already missed it—you're two seconds late, and it takes another three seconds to get back up to speed."

True to Laidlaw's intentions, the Cape 31 is providing a pathway for youth sailors onto a physically demanding sportboat that teaches the skills necessary to thrive in modern high-performance keelboat racing.

"If you've got a strong youth sailing background, then this is the perfect boat to get into," says Madelaine Kirk, a student at the University of Southampton and a former member of the British Youth Sailing Team. Kirk began sailing on the Cape 31 *Jiraffe* on the Solent after 29er and Nacra 15 campaigns as a youth sailor. "A lot of owners want young people on the boats because they are physically demanding to sail. You get put into a position that is accessible to you at that point, and then you learn from the others on the boat. There are pros on almost every boat, and you learn so much from them, which gives you the skills and ability to then go into professional sailing if that's what you want to do."

According to 31 North Yachting, the exclusive Northern Hemisphere supplier, 65 Cape 31s have been built to date at Cape Performance Sailing, with strong fleets now established in South Africa and Europe. Marty Kullman, of Sailing Inc., the US distributor, says they have five boats incoming and five more down the line, enough to build a summer race calendar in New England. Base price for the boat starts at $185,000; once shipped to the States (it fits into a 40-foot container) and pimped to grand-prix travel-program status, the options list grows to $250,000-plus.

Cape 31 class rules stipulate owner-drivers and a minimum of five crew (1,311 pounds maximum and 1,124 minimum) with three pros on board, which owner Sandra Askew says are needed to handle the boat properly. Askew, who came from the C&C 30, the IC37 and the Melges 24 before making the switch to the 31 in 2021, was initially attracted by the boat's racy look and the three-pro allowance. "They're technical boats—not hard to sail—but you do need to know what you're doing," she says. "They definitely get up and go, so it's good to have people on board that know what they're doing. It's challenging but just really, really fun. Fast and easy to manage downwind, and it

Sandra Askew's *Flying Jenny* had spent the 2022 season in England, where the bulk of new Cape 31s have migrated.

PHOTO: KRISTEN BERRY/ GALE FORCE IMAGES

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goes upwind nicely."

Despite robust fleets at England's top regattas in 2022, the fanfare of Cape 31 class racing in Key West and its success abroad, Cheresh is taking a wait-and-see approach. "I think it's going to be tough to build a fleet because all of us are sitting back and waiting for the next guy to buy a boat to determine if there will be a fleet in the US," he says. "I'm a bit on the fence, only because I want to make sure we can develop a fleet in North America. I am very interested in purchasing one of these; I just want to see a commitment from other owners."

Across the pond, UK sailors have faith in the class's longevity. "We've always had the conversation about whether or not the class will stick around," Kirk says. "There's been this five-year cycle where boats turn around, but I can see them sticking around because they are so accessible and so many people can sail them. I only weigh 60 kilos (132 pounds), and I can jump on the bow of one, and it is fine. The owners are very involved in the class, so I believe that the boat is not just a fad."

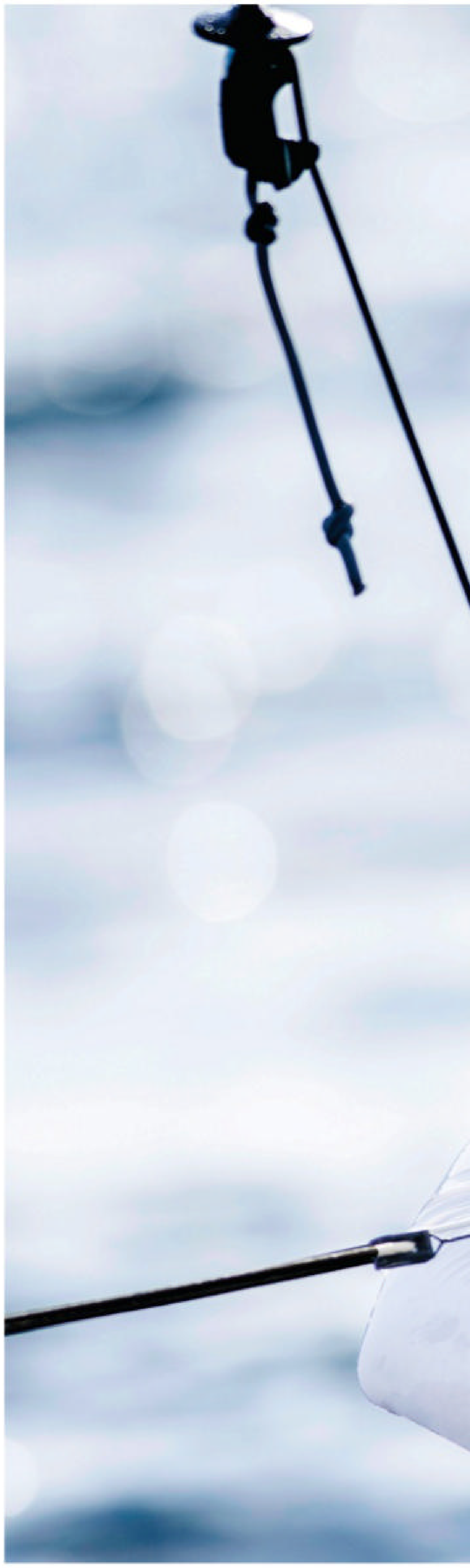
Mills is confident the Cape 31 will stand out among other one-design keelboat options and has a thriving class to ensure its continuity. "What sets [the Cape 31] apart from other one-designs is that it goes upwind like a bigger boat, which attracts a wider range of racers looking for a tactical challenge as well as pure adrenaline," Mills says. "But the boat is only half of the formula; the class has built a fun, competitive dynamic that draws owners and crew into the fleet. Happy owners have been our best salesmen; they are having a ball in a well-managed, colorful class."

While the Cape 31 has a way to go before it becomes an established international class, at least one thing was clear from its Southernmost coming-out party: The boat looks great in the spotlight and sure is a head-turner when planing past. ■

AMERICA'S HIGH-PERFORMANCE ACE

BY DAVE REED

The 2022 Rolex Yachtsman of the Year has been plotting his ascent to the top of the new high-performance catamaran world with a focus on perfection. The journey continues.



Ravi Parent got his youth start in multihulls, which set him down a path to high-performance catamaran prowess.

PHOTO: PAUL TODD/ OUTSIDEIMAGES.COM

RAVI PARENT is sailing at his own pace these days, and the pace is always quick…and calculated. He is as measured as one would expect of a Boston University cum laude mechanical engineer who's been sailing fast gear since before he had his driver's permit. His dedication to perfection propelled him to the top of the Worlds for both the A class and Formula 18 catamaran last year. With two world championship titles in hand, he's the first American sailor to win both in the same year, as well as the F18 Europeans. Cat sailors know that's a big deal. The A and the 18 require serious talent, commitment and technical savvy. Parent has all three. Being shortlisted as a 2022 Rolex Yachtsman of the Year is a humbling honor, he says, when I catch him driving to the Sarasota Sailing Squadron on a late January afternoon (He would later collect his Rolex Yachtmaster.) It's also a validation of the work he's put in and the close-knit cat community that's supported him along the way. On this particular windless afternoon, he's headed to where his sailing obsession took hold, for another day of boatwork on his latest challenge—the Moth.

What's on the work list?
Not much. I'm trying to design a travel bag for the wings so I can fly with them.

How new to the International Moth are you?
I got one at the beginning of last summer (2022). Right after the A Cat Worlds, I sold that boat and got this one because I wanted to take on a new adventure. I'm not done sailing the A Cat by any means, though.

How's the swimming been?
It's been a vertical learning curve for the first month, but it's starting to get a little better and a little more fun every day. The sensations between the A Cat and the Moth are similar; the foiling concept is the same, with the pitch and ride height and all that stuff. The speed and the sail trim are similar, but it's not trapezing, so your righting moment comes from heel, and the biggest thing I've been learning is the effect that heel has on the boat. Jibes have been a bit of a challenge, and the boat I have is the Bieker [model], which has the smaller wings, so…I've broken a few tillers while learning to tack, but now I'm a little better at it and saving money.

Where are you on the sailing-versus-boatwork spectrum these days?
Actually, not bad. I've been thinking about this recently. The trade-off I'm seeing is that the A is faster to rig—I can go from the parking lot to sailing in like 30 minutes. The daily maintenance is longer, though. With the A, there's a lot more foil sanding and staying on top of the systems, especially after a windy day. With the Moth, there's virtually no foil sanding because you barely touch them—they go in and out. Rigging it, however, does take a bit longer. I'm still about an hour from showing up to going sailing, but to be honest, I haven't broken much. Yesterday, I did about 40 miles in 15 to 24 knots and have no boatwork today.

How do you afford the time and upkeep with all your high-tech, high-demand craft?
I work for Morelli & Melvin as a part-time design engineer, primarily working on power-cat foils. There is some sailboat stuff, but powerboats are easier than sailboats in some regards, so that's where I've started. I'm still getting three to five days of sailing a week, mainly three-hour sessions. I have to be a lot more organized with my time to make sure I'm using every second effectively. Outside of that, I've been doing a lot of coaching for the development teams of the Nacra 17 and 49er sailors, and also helping with the US Sailing Team's equipment tech and testing program.

Take us back to the early days of Ravi the Little Ripper.
I started young in the F16 and the F18s, so it wasn't quite one-design sailing like traditional junior sailing kids would do, which I now realize is a strength because I was sailing among adults most of the time. Also, the boats were different designs, which got me interested in boat design. At the time, the F18 class had like four different builders, and they were all different. It was a fun learning experience at a young age.

I did Optis and Lasers too, and that was socially driven, as it is with most kids. I wanted

FORWARD
spinlock
WING
HELLY HAN

to hang out with my friends, but I was also competitive and wanted some independence on the water. I was also small—probably 120 pounds—and I could sail the Radial in Sarasota in light wind, but I'd get my butt kicked in anything over 12 knots, so the doublehanded catamaran was perfect for me. I could sail with one of my bigger friends and be on a more-even playing ground. We had a couple of multihull members at the Squadron who were awesome enough to let a few of us take out their boats. We had a group of six sailors back in 2011, and we all basically set a goal that we wanted to do the multihull championship that summer.

As a lifelong Floridian, how'd you end up college sailing in the cold Northeast?
I did look at a few Florida schools, but I decided to try something different to see if I would like it. Stan Schreyer (Boston University head coach) was awesome to me. He took the time to introduce me to what it would be like going to school there. The allure of college sailing in the Northeast was strong,

and it also didn’t hurt that both of my parents went there for their medical school.

What potential do you think Stan saw in you?

I think he saw what other college coaches didn’t realize, and that was my catamaran sailing skills. While other coaches were looking for the traditional youth sailing 420 type, Stan, being a multihull sailor himself, knew that cat sailing forces you to think faster and to have long-term strategic planning. In an FJ, you can do 20 tacks and not lose anything—you might even gain. In cats and skiffs, you’re limited in your boathandling, so you have to be thinking a half a leg ahead. You have to have your plan and fast reaction time. Having those skills coming into college sailing really helped me. I felt if I was being dumb on the racecourse, I could rely on speed, and a lot of that came from cat sailing.

After graduating, you didn’t waste any time jumping into Olympic sailing, did you?

I wanted to dive into it right away. It was near the end of the last quad, so I didn’t have enough time. It was about a year-and-a-half investment. I had done well in the Nacra 17 at the Miami World Cup in my senior year. I had some funding, and all the parts came together to just get into it. That was with Caroline Atwood, and we did a compressed campaign, and like learning the Moth, the curve was vertical. My cat-sailing background helped, but I was functional—not proficient or even good by any means. If I started then with the skills and maturity I have now, I’m sure it would have gone a different way. I’d have to do it again the same way to get to where I am today, but I’m happy with the way things are going now. Learning the boat was a huge part of it. It just requires a lot of hours in the boat because to learn anything mechanical, you just have to do it, but you have to do it efficiently.

I’ve been told that finding the perfect Nacra crew is like speed dating.

Absolutely. It’s a personality match and also a size thing. There might be someone like me who’s more technically savvy, and someone who’s holistic savvy or the right size. There can be a lot of different combinations, but it’s really about bringing out the strengths, and each sailor to make it work. Caroline and I were too small. That was the biggest thing. The Nacra 17, especially now that it’s gone to full foiling upwind, the size had gone up. We were always in the 300 to 310 range, and now it’s more like 315 to 320 combined.

Was it straight to the nine-to-five when that campaign ended?

After we missed selection at the Trials, I got the job with Morelli & Melvin, so it was nice to be able to pay the bills. And I wanted to do something independent of Olympic sailing as well, which is something I suggest to a lot of the Olympic Development sailors I coach. You obviously need to learn your boat, do your diligence and put in the hours, but it’s good to develop something on your own too, especially for drivers who don’t get tired nearly as much as the crews. It’s important to have some sort of singlehanded extracurricular that complements what they’re trying to do. For me, that was the A class. I bought a used one and went straight into it.

Not an easy boat to just dive into.

It was a steep learning curve for sure. The things I was focusing on and learning in 2020 are so elementary to me now. It was an older boat, and I basically stripped it and started over to get it up to date.

Was it intimidating getting into a class notorious for being an arms-race kind of boat—at least at the top of the class?

A bit, but even now I’m very strict about how I do my budgets. I’m realistic about what I can afford, but I’m also strategic about the equipment I buy and how to do it. I knew, eventually, my strengths in sailing the boat would outweigh a lot of the equipment stuff. From sailing the Nacra 17, the downwind foiling was kind of easy. Fundamentally, I knew what was going to happen. I just need to adapt to having one sail and foils that are a lot more sensitive, and dealing with rudder differential.

To stay at the top of the class, people do end up cycling through boats, but that does not by any means diminish the boat you have. It’s about being realistic. It’s hard in our sport because everyone has different situations, so you can’t compare yourself to anyone else; you can take inspiration and ideas from others, but you really have to scale it to your own life. The biggest thing for me is being able to support myself, covering the basic expenses, and understanding how to have an income and go from there. Figuring out how to make every dollar do as much as it can do. It could be into equipment or coaching, time or convenience. For example, do I rent a slightly more expensive apartment that’s closer to the venue so I can save on time commuting and sail more often—things like that.

What were your expectations going into the A Cat Worlds in Houston?

Looking back, I think I might have been one of if not the most prepared person. I spent the most time at the venue—almost two months—which absolutely provided me an advantage. I didn’t have the latest and greatest equipment, but I had confidence in all the training I’d done in my boat. I knew my boat well and knew what I could do. The more confidence you have in your equipment, the more you can get away with not having the latest and greatest.

What was your approach to training in Houston?

I did a lot of training with Bruce Mahoney. It was about 75 percent with a training partner and 25 percent on my own. I have a list of what I’m working on in any condition, so I’m always prepared for whatever condition I have to make good use of it. With Bruce, we’d do tuning and finish up with some racecourse stuff. But if I was on my own, I’d work on my boathandling for hours, or acceleration, or sail around and study the wind on the bay. Being my first A Cat Worlds, I was being realistic and had no idea what was going to happen.

My focus of the regatta was to continue to have a level head—but my first race was terrible. I rounded the top mark in second and hooked a fish. That day was light-air marginal foiling, so it was really difficult to get the fish off. I rallied for the next race and ended up winning it.

That first race was unusually light air too, and I knew more

A product of the Sarasota Sailing Squadron’s multihull scene, Ravi Parent is remarkably fast and fluid on two hulls.

PHOTO: PAUL TODD/ OUTSIDEIMAGES.COM

breeze was coming later in the week. I had been developing a more refined starting technique, which ended up being a bit of a secret weapon. I'd practiced a lot on full-foiling starts, so I knew as soon as the breeze was coming, I'd be able to start 4 knots faster than anyone next to me. That sort of became my strength the rest of the regatta. That made my life easier on the windy days because a couple hundred yards immediate gain off the starting line is a big advantage.

What's that move called? The Ravi Slingshot?
I learned in Nacra 17 and Olympic sailing that your biggest gains tend to happen when the fleet is all on an even ladder rung, which is certainly off the starting line and up the first upwind leg. That's when you can pass everyone or be last immediately. So, I knew the starting line would be a critical time and knew the spacing between boats would be good. As the breeze increased, my biggest focus was the starting initiations that require the least investment. By that, I mean I'm trying to accelerate and get on the foil in a thin lane.

How do you practice for that?
Basically, I'd start my watch with a 15-second countdown, do an acceleration, and understand how much time and distance it took me to go from dead stop to full foiling and how much of a lane it used. I could go from zero to full foiling in about three boatlengths, and it was about a boat width of a lane. So, that's about 12 seconds for acceleration, and 10 seconds on a good day.

It requires being a bit back and envisioning where that clean lane is going to be, where the [windward boat's] wind shadow is going to be, and whether I can punch through it. The windier it is, the narrower the wind shadow, so you can kind of get through it easier.

Let's switch over to the F18 Worlds, which you won with crew Severin Gramm, another technical class with some serious talent.
I have been sailing F18s on and off since I was 14. There's a lot more power in the F18s than the A Cat, so that makes the racing more competitive. It was nice to divide the labor with Severin.

That journey to the F18 Worlds started in 2021. Pete Melvin (the Morelli & Melvin designer for Nacra), he let me take his new boat and rig it. Peter Vink (of Nacra) supplied a boat for the Europeans in Lake Garda, and that was a good result for us, and again that was another regatta that sailed to our strengths. We're athletic and had the boathandling down, and that paid off because it was a flat-water event and breezy. We knew we could just put the hammer down and out-muscle a lot of people. Severin's physical and strategic strengths filled in many of the gaps in my own game, and we figured out how to maximize our potential with the short amount of time we had sailing together. The Europeans was Severin's first time sailing an F18.

You're 27, a double world champ, and a Yachtsman of the Year nominee. That must make you a pro sailor in demand these days.
I'm technically a Cat 3 because I coach and do receive endorsements, but I'm not paid to go sailing. I've never been paid to go sailing. I'd love to be paid, but my philosophy is that I want to do the sailing that I really enjoy. I love the small boats, and I'm open to doing larger boats, but for me that's not the J/70, which is perfect for what it is and a great class, but I'm a high-performance junkie. I have to sail a boat that goes over 20. That's my thing. I would love to someday get to SailGP.

Morelli & Melvin is incredibly supportive of the sailing I do, and I could not do it without the flexibility [the owners] give me. Pete has a long history with the A class as a two-time world champion, and I'm trying to beat his record. I still do have the passion for the Nacra 17. I still have the equipment, and feel like I have unfinished business in that class and would like to come back and do my best there. The journey of Olympic-class sailing is incredibly rewarding and just makes you a better sailor. The skills I'm using now, the organization, the planning and the focused training, all came from Olympic sailing.

I don't come from a sailing family—my dad played soccer and did some local racing and cruising, and my mom was a violinist. But for the most part, I'm really the only sailor in my family, so I take a lot of pride in carving my path in the sport because it's truly been my own path. I've had to figure out all this stuff and learn from people around me. That said, I'm really enjoying everything I'm doing, and I understand sailing is a lifelong career and sport. So, I know eventually my time will come, and I'll just keep doing what I'm doing. ■

BY HERB MCCORMICK

Gillian Whatmore, captain of the Luffing Lassies' Sunfish fleet, shows her skills at the Sarasota Sailing Squadron, home to one of several women's racing groups active in southwest Florida.

PHOTO: JENNIFER JOY WALKER

IN LUFF WITH LASSIES

Weekly women's dinghy racing is a big deal in southwest Florida, especially in Sarasota, where one woman's call to action in the early '70s sparked a movement that thrives today.

THIS second Thursday in January is a perfect Florida winter morning, the sort of weather the local chamber of commerce dials up regularly—a light easterly breeze barely ruffling the shallow, pristine waters of Sarasota Bay. Along the beach that fronts the busy Sarasota Sailing Squadron, there is commotion; like every early Thursday morn from September through May, several dozen seasoned gals known as the Luffing Lassies, almost all with their diverse and accomplished working lives in the rearview mirror—and none of whom will be remotely mistaken for college kids—are rigging up their prams, 420s and Sunfish for their weekly fix of sailboat racing. This particular Thursday, however, is somewhat different: It is the running of the 24th Annual Lilly Kaighan Memorial Regatta, so named for the Lassies' founder, the somewhat obsessed sailing lady who came up with the idea for this organized madness in the first place—some five decades ago.

My introduction to this uncharted world is a fellow Rhode Island snowbird like myself, on hiatus from the New England winter for a few months. Before her recent retirement, Lee Parks was the inshore director at US Sailing for 33 years, but she's also a lifelong Sunfish racer. "I never outgrew my junior boat," she says. "The class has a culture that's just phenomenal."

She'd competed in midwinter Sunfish regattas in Sarasota many times and considered it a premier venue for dinghy racing, but she never knew about the Luffing Lassies until she inherited a property nearby, was introduced to the group, and quickly became one of them.

"They envelop you," she says.

Lee loves the weekly competition but adds: "The biggest, best thing they do is bring in new people to the sport, teach them to sail, and give them an outlet to the water. They're so welcoming."

And so is she, inviting me to walk the beach while she makes some introductions.

So, thanks to Lee, there I find myself, chatting up the Lassies. And, oh my, what a story they have to tell. These days, there's much hand-wringing from cranky old men like myself about the decline in sailboat racing. But here on the Gulf coast of Florida, where geezers abound, the Luffing Lassies and their 700 counterparts in the Florida Women's Sailing Association, comprised of nine yacht clubs from Dunedin to Venice (the Salty Sisters from St. Petersburg, the Dinghy Dames from Davis Island, the Mainsheet Mamas from Tampa, the Windlasses from Dunedin, and so on) represent nothing less than a sailing renaissance, where they're having trouble figuring out where the new members in the ever-expanding fleets will store their boats. They admit it's a fine problem to have.

Is there something here that the Luffing Lassies can tell us about sailboat racing that perhaps should be obvious? Like, if you form a group that's open, accommodating, friendly and supportive, and you invite just about anyone sharing the same mindset who wants to learn and challenge themselves, you can come up with something cool, unique and wonderful, where people dive in and thrive? As in, if you build it, they will come? The Lassies, I discover, in both their long history and unrivaled passion for sailing, have quite a bit to say about it all.

Ursula Olson has been there from the beginning, before the Luffing Lassies taught and introduced more than 500 women to the sport, back when it was originally known as the Sarasota Sailing and Sinking Society. "We used to capsize quite a bit," she confesses.

Olson, who tells me she's been a Lassie for 44 of the 50 years they've been in existence, says the organization was launched when Kaighan, a recent arrival from Tampa where she'd started a similar group, approached a handful of women about doing the same thing in Sarasota.

"She had two Clearwater Prams (a close cousin to the Opti) and said she had access to three more, so there were five boats," Olson says. "Learning to sail was very attractive to many, including myself. The message always was: 'Don't worry, I'll help you.' She was absolutely the most accommodating, positive person. And she attracted those kinds of people. Some come and go quickly because they don't want to mess up their hair or their fingernails. But that's not who we are. There are about 90 Lassies today, ranging in age from their 30s to their 90s. Our 90-year-old still sails, not racing, but on a Hobie Wave we have for fun sailing. Everybody feels like they belong. It's empowering. I'd say 95 percent of my friends are from this group. I've definitely found my tribe."

That tribe, I soon learn, is an accomplished one, whose previous occupations include airline pilots, lawyers, doctors, even a federal judge. Then there's Linda Schwartz, who joined the Lassies in 2009 after retiring to Sarasota following a career in the Army as a chief warrant officer.

"I was working out in the gym when somebody asked if I was interested in joining a women's sailing group," she says. "Yes, I was! I knew immediately when I walked in that this was for me. This isn't mahjong; we're a pretty Type A bunch. Actually, we're a sisterhood. You put us all together, and we're a force to be reckoned with."

Schwartz, a former FWSA president with a solid mechanical background running Army maintenance units, has earned the nickname "Miss MacGyver." She oversees the platoon of "Maintenance Mamas" who work on the 15 Sunfish the Lassies keep for training newcomers in the offseason summer months when they aren't actively racing. Once the newbies get a season of racing under their belts, they generally procure their own boats, and the cycle repeats itself.

"We have a long-term planning committee now because we've gotten so big and are growing so much," Schwartz says. "How do we manage it? We're outgrowing the area we have at the Squadron. Our group has always been about word of mouth. The locals always knew. But now we're getting more publicity, which means more women. It gets complicated."

Once everybody is rigged and ready after a skipper's meeting, which commences with laughter, stretching and calisthenics, I hop aboard the safety boat to observe the on-the-water action with a pair of the so-called "Starboard Studs" (everyone gets a nickname), the male volunteers from the Squadron who man the race committee and mark boats. "When the whole #metoo thing happened, they thought about changing our name," says studly Pete Buros, one of the safety officers. "Instead, they gave us shirts with the name on it. They're fun to wear in bars." Buros intimates that they are excellent conversation-starters.

Before heading out, Lorri Kaighan—the daughter-in-law of founder Lilly, who succumbed to breast cancer at far too young an age—hands me a copy of the day's schedule, which reads:

"The Lilly Kaighan Memorial Regatta is a special day for all Luffing Lassies. It celebrates its founder by having its members participate in a typical day of competition by racing in Clearwater Prams, a Sunfish or a 420. (The Prams and 420s had three boats each; with 30 boats, the Sunfish has become the group's predominant class.) And the course is the original one that has been sailed by the Lassies for over 45 years: Modified Olympic (for the Sunfish and 420s) and Triangle for the Pram. It is a day filled with camaraderie, good competition, special trophies, and a luncheon to celebrate the day. The perpetual trophies were handmade by Lilly's oldest son, Jim Kaighan, who resides in Marsh Harbour in the Bahamas. Lorri Kaighan made the individual trophies this year. And they were definitely made with a lot of love."

With that, the fun begins.

Three races unfold, the first two in a light southeasterly, the third in a building westerly as the sea breeze kicks in. There is a disparity in prowess and efficiency on the starting line. A handful of competitors several rows deep seem not to have gotten the memo that there'd be racing today, which I realize is utterly beside the point. "Everyone who competes is a winner" is somewhat of a cliché, of course, but in this event, it is absolutely true. There are some midfleet clusters at the top mark, and some obvious fouls committed by the tail-enders, but not a raised voice to be heard. It's all so…conversational and punctuated with laughter, so totally refreshing.

All that said, the sailing is crisp, clean and very, very competitive at the front of the busy Sunfish fleet. There is also a clear, dominant competitor, a mere wisp of a woman on a Sunfish called *Wild Child* named Lisa Brown Ehrhart, who runs away with the Memorial Regatta with three straight bullets.

Like every Lassie, it seems, Ehrhart has a unique background. Originally from the Virgin Islands, where her family ran a yacht-management business, for years she worked as a professional captain, delivering boats and skippering charters. Though she never raced sailboats in the islands, she says: "I had the gift of growing up on the water. There are many people who are better than me in terms of tactics, the chess game. But I do understand the water, as a surfer and windsurfer, and maybe that's the only piece I have that's a little different."

When she moved to Florida so her kids could attend high school, she immersed herself in dinghy racing for the first time. "I needed to get on the water and sail, and I discovered the Lassies," she says. "It was very humbling to start off with. But I've grown to love it. It's the culture that's so amazing. It's like a Caribbean vibe, so relaxed."

At 5 feet and 100 pounds, Ehrhart says the regatta's two early light-air races played perfectly to her strengths. And she credits professional sailing coach Mike Ingham—whose wife, Delia, is a Lassie and recently organized a new Sunfish fleet at the Sailing Squadron—with "truly helping me develop my newly acquired racing skills."

But, like every other Lassie I speak with, it is her fellow Luffing mates that really make the difference. "There are some really talented, amazing women here," she says. "We learn from each other. We're just really passionate about being here and sailing together."

So, what to make of all this? It's pretty simple. In these divisive days, when we fret about politics and the economy and every other bloody thing, at least one thing in this madcap, crazy world of ours is certain: The Lassies will be back at it next Thursday, bright and early. ■

CRANKING UP THE POWER

The AC75s of the America's Cup are power-hungry beasts. The human input required for sustained foiling and maneuvers on demand is a critical piece of the design puzzle.

AMERICAN Magic's AC75 *Patriot* glides through the water near Pensacola, Florida, and as it picks up speed with the day's favorable winds, the imposing dark hull rises from the water and begins to plane on its hydrofoils. Crouched near the bow, pedaling furiously, John Croom is lashed by spray. His earpiece crackles with chatter from the rest of the crew. He has watched videos of America's Cup boats. He's logged hundreds of hours of training on land. But this is his first time—his first time on any sailboat.

"Still to this day, that's one of the most euphoric moments I've ever had in my career," Croom says. "Getting the opportunity to sail, and then just feeling that actual takeoff and being on the foils was something super special. That was the day I fell in love with it."

While some of sailing's traditionalists bristle at the inclusion of cyclors in lieu of grinders on America's Cup boats, there's no turning back now. The technology will be found on every boat in the 2024 America's Cup.

This novel power-delivery method has opened the door for newcomers like Croom to hop aboard, like throwing a drivers-ed student into a Formula 1. It has also led to a revolution in the way America's Cup teams recruit talent, hone their physiological training, and use cycling know-how to power the AC75's hydraulic controls.

"We're finding that cyclors bring much more power to the table," says Ben Day, American Magic's performance lead. "Cycling uses much bigger muscle groups; therefore, they can produce more power than arm grinders. And with the new AC75 regulations of reducing crew numbers (eight sailors total), we need to find that power in other ways. So, most teams are looking at cyclors at this stage. Glutes, quads and hamstrings can produce more explosive power and more power for a longer sustained period."

Day is another example of someone outside the sailing establishment who quickly entered American Magic's inner circle. Day had a 12-year career as a professional cyclist, racing primarily in North America. Once he retired from racing, the Australian started Day by Day Coaching out of his adopted hometown of Boulder, Colorado.

Not surprisingly, Day and American Magic looked to the cycling world to find athletes to fill their "power teams." The team had preliminary conversations with Kiel Reijnen, a professional rider who spent six years in cycling's WorldTour, racing the sport's premier events, such as the Tour of Spain, Tour of Flanders, and multiple UCI World Championships.

"We focused on leg-dominant power sports, with similar activities that would fit the needs for racing on the boat," says Day of the recruitment process. "We have taken

American Magic's power team is currently a mix of sailors like Cooper Dressler (left) and high-output athletes like cyclist John Croom (right).

PHOTO: KATRINA ZOE NORBOM/AMERICAN MAGIC time to examine a whole list of athletes that might fit the bill, and then have reached out to consider interest."

It wasn't as simple as assembling a bench of top cyclists. The rule book states the combined weight of the eight-person crew must be between 680 and 700 kilograms. Split evenly, that means each person should be between 85 and 87.5 kilograms. Reijnen weighs 65 kilograms. It's rare to find a pro cyclist that weighs more than 80 kilograms because power-to-weight ratio in cycling rules all. Cyclists can control both variables in the power-to-weight equation. Training can boost power output, measured in watts. They can also lose weight to improve their power-to-weight ratio. Naturally, any given rider has limits for both variables. The best professionals are extremely efficient in their power production and astonishingly lean. It would be a tall order for someone like Reijnen to gain 20 kilograms without compromising their power output.

Croom is uniquely suited to the challenge, having found cycling late in life after playing football in his younger years and at times weighing close to 136 kilograms. Though he slimmed down to about 90, he'd never be suited for road cycling. Track cycling, on the other hand, was a good fit. Since track events are held on a flat, 250-meter track, weight can be sacrificed at the expense of raw power.

Ashton Lambie is another hopeful on American Magic's power team who never quite fit cycling's mold. This mustachioed Nebraskan holds the record for the fastest ride across the state of Kansas. He's also the only human to ever ride the 4 km track pursuit event in under four minutes.

The riders you might see on television at the Tour de France are not going to be aboard an AC75 in Barcelona. Similarly, the athletes who have been recruited to pedal the cyclors aren't ready to ride on day one, despite their extensive backgrounds in cycling. Intense training is underway to prepare them for the demands of an America's Cup race.

"There are periods where we spend time focusing more on endurance or strength development," Day says. "At other times, we're working more around the high-intensity phases."

While American Magic has been mum about the specifics of the training and the AC75's power demands, Croom has posted many of his recent workouts and training rides on Strava, an online activity tracker.

Croom has done extensive endurance work, already logging weekly rides longer than 80 miles in January. He's also been completing viciously intense interval workouts to build his body's tolerance for maximum efforts. For example, he was able to hold 371 watts for 20 minutes in one such workout. Simply a statistic, right? I've been racing bikes for the last 25 years, and at my best, I can hold 302 watts for 20 minutes. Someone without training or experience would do well to maintain just half of Croom's wattage.

While the training and performance of these new crewmembers are opaque, the technical details of the AC75 are practically impenetrable. American Magic's spokespeople and crew did not answer specific questions about how the hydraulic power system works, but what we do know is that the boat has a hydraulic accumulator tank, which stores pressure generated by the cyclors. The crew uses a hydraulic actuator to convert the tank's pressure into force, which in turn powers the boat's controls. Any time the boat needs to tack, jibe or simply trim a sail, power is needed.

Sources indicate that the hydraulic accumulator results in a very unusual feel at the pedals for the power team. It's also believed that as the tank gets full, the effort to add more pressure to the accumulator becomes harder.

"We can change the different inputs to the system," James Wright, of the American Magic power team, told the America's Cup Recon Unit, which monitors and reports on the team's developments. "The different power demands necessitate different inputs from us on our side. The system kind of auto-adjusts depending on the demands from the sails and, of course, what we can give it."

It's easy to imagine how the team might strategize its efforts, given the intensity of a 20- to 30-minute America's Cup race and the essentially limitless power demands of the boat. They might attempt to keep the tank as low as possible with steady, moderate pedaling, and then fill it as fast as possible with maximum effort ahead of a demanding maneuver like a tack. Perhaps some of the four riders would be specifically reserved for all-out efforts to fill the tank on demand, while others would ride steadily to feed power to minor adjustments.

Whatever the strategy, it is clear that the entire crew needs to be in lock-step during a race. "When we talk about the sailing team, we consider the power team part of a sailing team; they have to work in cohesion," Day says. "The afterguard will request efforts from the guys as they trim the boat, and they'll learn what they can deliver in terms of power. And the guys will give it their all to deliver what's asked of them. So, there must be solid cohesion between the two groups; ultimately, we are one team."

Clearly, the sailors, engineers and coaches are working furiously to optimize the use of the cyclors. There is another area of the sport that has some catching up to do, and that is World Cycling's anti-doping controls. Even the casual cycling fan is aware that performance-enhancing drugs have long tarnished the sport's reputation. Given the massive physiological demands placed on the AC75's power team, the sport's governing body, World Sailing, would be wise to heed the lessons of cycling's past.

In the wake of a major doping scandal about 10 years ago, cycling began rigorously testing athletes out of competition because it was found riders could achieve huge performance gains by doping for training and then cleaning up in time for in-competition controls at races. It stands to reason that this is a major liability for the America's Cup, given the amount of run-up that the teams have to train for the 2024 event.

Although World Sailing conducted 186 in-competition tests between 2020 and 2022, including anti-doping controls at the last America's Cup, it did not conduct any out-of-competition controls during those three years. To ramp up efforts for the 2024 Cup, World Sailing brought on Vasi Naidoo as its director of legal and governance. Naidoo has experience with anti-doping efforts at the Olympics and Commonwealth Games, and she served on the Ethics Commission at the UCI, cycling's international governing body. World Sailing confirmed that there will be out-of-competition anti-doping tests in 2023, and the testing will include America's Cup athletes.

Fortunately, on the whole, the interplay between cycling and sailing—two unlikely bedfellows—has resulted in a fascinating exchange of technology and science. "The transition to cyclors allows a tech-forward, applied-sciences sport to pull in a completely separate sport and borrow technology from it," says Reijnen, who himself is an accomplished sailor, having finished the WA360 event sailed out of Port Townsend, Washington, in 2021. "What does sailing borrow from cycling, but what does cycling then borrow from sailing?"

Even at the person-to-person level, this exchange of information and experiences has been rapid and, in fact, quite cordial.

"The coolest part about being part of this team is that I came into this group of sailors so new and so green," Croom says. "And they were super-welcoming, understanding, and trying to get me to learn as quickly as possible. Like, any questions I had, there was no such thing as a dumb question, and that was something special." ■

BY LUCAS MASIELLO

INTO THE MIX

A new Olympic discipline, unknown teams and a long road to Paris: These are the burdens of today's Mixed 470 sailors.

Trevor Bornarth and Louisa Nordstrom are paired for a run at the Paris Olympics Mixed 470 berth but must first qualify themselves and the US team.

PHOTO: ALLISON CHENARD/US SAILING TEAM

TRAINING alone in their International 470 off the south shore of Long Island, New York, in the summer of 2021, Louisa Nordstrom and Trevor Bornarth were a world away from the spectacle of the Tokyo Games. There, Olympians Stu McNay and Dave Hughes rolled their sails together for the last time, marking the end of the individual men's and women's Olympic 470 disciplines and the beginning of the new Mixed Olympic 470 era. For Nordstrom and Bornarth, and many young sailors looking to reach the pinnacle of dinghy sailing, this new coed medal provides a unique opportunity to compete in the Paris and Los Angeles Games.

"It (the switch to a mixed class) does level the playing field a little bit for a new sailor coming into the fleet because everyone has to reset by sailing with a new person," Nordstrom says. "There's a lot of younger talent coming into the 470 because I think it's easier to get into the class given that everyone is starting fresh."

Nordstrom, 24, from Sarasota, Florida, grew up racing in the ILCA 6, Club 420 and 29er fleets and excelled at Yale, receiving four College Sailing All-American honors before graduating in 2020. Bornarth, two years younger and from Port Solerno, Florida, stood out in the International 420 class, placing second at the 2017 World Sailing Youth World Championships. While pursuing Olympic 470 sailing full time, Bornarth is also enrolled online at the University of Florida.

The pair first connected in Newport in the fall of 2020 through the US Sailing Team Olympic Development Program, an initiative aimed at preparing elite youth sailors for Olympic-level competition. With both sailors aiming for the 2024 Games, they began their campaign with the Oyster Bay 470 Team and were named to the US Sailing Team in 2022.

A year and a half later, now with the full resources of the US Sailing Team, their most significant challenges still lie before them. Following years of intense training and competition, however, Nordstrom and Bornarth are dialing in their performance, and their results are getting them ever closer to the top.

"Last year was a big year of figuring out how to sail the 470 fast—and that is a huge project," Bornarth says. "Now we're focused on racing, in-the-boat communication, and how we're making decisions in tactical situations where you can either gain three boats or lose three boats. That's how we can go from struggling in the upper-middle pack to punching through to the medal race consistently."

Developing Olympic-level performance in the 470 is a lifelong mission, says two-time Olympian Dave Hughes. "You never finish learning how to sail a 470," he says. "It has many modes available to you, both upwind and downwind, and you pay a large price if you spend time in a mode that is not ideal. You can sail the boat at an A level for an entire race and artificially think that you're at an A-plus level, but you pay the price with your results."

With Nordstrom and Bornarth each bringing a unique background and experience to the 470, they rely on each other's strengths to excel in a variety of conditions. "Louisa is an absolute weapon at calling the shifty stuff—college sailing definitely paid off there. When it's cranking, and Louisa can't see anything, I'm calling tactics," Bornarth says.

The ability for teams to rely on both partners in the tactical conversation is paramount for success in the 470, Hughes says: "Most successful teams are running it so that the crew and the helm can appropriately shift the tactical football. You have to be able to transfer authority on the tactics effectively—there's just so much to be gained and lost in the margins that that's where the best teams show their prowess, and that's how you win regattas."

Training with international partners in Europe has allowed Nordstrom and Bornarth to work with the world's leading teams while the American 470 fleet continues to develop. "We've worked a lot together with the Italians, the Israelis and the Brits," Nordstrom says. "Being in Europe and being able to go early to events and train together with the entire fleet has been an absolute game-changer."

The duo also uses state-of-the-art technology to improve during domestic solo training sessions. "We have trackers, and at the end of the day, we can put it all on a tablet and analyze different aspects of our sailing," Bornarth says. "That makes it a little more productive than it would be if we just say, 'Oh, we're going out to look at this new mainsail,' and we're by ourselves—we don't get any data off it. Now that we're incorporating these sailing instruments, it's been a lot more productive."

Seeing success in their racing results after years of hard work is a major driving factor in Nordstrom and Bornarth's campaign. Finishing 13th at the 2022 International 470 European Championship in Turkey, their best campaign result to date, has motivated them to become even better. "Turkey was really exciting, as we were finally in the front of the fleet," Nordstrom says. "We've known we can do it, and it was great to finally get a taste of accomplishing it. I think a big motivation going forward is to continue experiencing that feeling."

> **The 470 remains one of the world's most competitive classes despite the influx of new sailors following the change to a mixed format.**

Nordstrom and Bornarth represent a generation of younger 470 sailors stepping into a notoriously technical and specialized class. Spearheaded by the Olympic Development Program and the private Oyster Bay 470 Team, collegiate sailors and recent graduates flocking to the boat are revitalizing what was recently considered a dying one-design class.

"Right now, the problem is we need boats," Bornarth says. "People are looking to buy more boats, and a lot of the [420] youth teams are starting to cross over. Domestically, US Sailing has done a great job of starting to promote the 470 again, and if we can get 10 boats on the starting line of the [2023 West Marine] US Open Sailing Series, that will probably be the first time in a decade that we've had that."

The 470 remains one of the world's most competitive classes despite the influx of new sailors following the change to a mixed format.

"I think, initially, the switch definitely leveled the playing field. But as we've seen over the past six months, it has fully ramped up—all the top guys are back with new crews or crews from the women's or men's squad," Bornarth says. "You still have all the same sailors that were initially at the top of the men's and women's fleets now at the top of this fleet, so it's still very challenging. Now that we've combined the men's and women's fleets, it's gotten deeper. While the level may not be as high as it was in the top three of the men's or women's fleets, now the top 15 are there."

Strong competition is also returning to the United States, with four-time 470 Olympian Stu McNay partnering with 2021 Women's 470 Olympian Lara Dallman-Weiss. The full consequences of the shift to the mixed format will not be known for years to come, but current results show promise in assisting the development and longevity of the fleet.

"There's a lot behind the decision for it going mixed," says Hughes, who serves on World Sailing's Athletes' Commission, a body that represents Olympic athletes in World Sailing's decision-making process. "Ultimately, it did yield a case for [the 470] being in for another two Olympics: Paris and LA. Does that help the class? Absolutely, it does. Is the class different in terms of the people and the vibe? Yes, for sure. There are some people who have stuck on after Tokyo, but mostly it has provided a lot of newcomers an opportunity in the class. I think it is healthy, and now it is up to the class over the next two years to show that it can become the type of class that is more modern in terms of its racing, thought process and class development, and really deserves to be in the Olympic schedule."

While Nordstrom and Bornarth have a long road ahead, they're enjoying every moment of it.

"It's all about the process and enjoying it," Bornarth says. "The big thing in our campaign is making sure that even tasks that aren't that fun, we try to find the joy in it. We tell ourselves every day that we're living the dream—this is what we want to be doing."

While the Olympic regatta was a world away not too long ago, the call of Marseille is fast becoming a real thing for Nordstrom and Bornarth. There will be plenty more sails to roll before then, and if Olympic aspirations come up short in 2024, the next big shot in Long Beach is right around the corner in 2028. ■

BY CHRIS MUSELER

AHEAD OF THE SHIFT

This sailing coach abandoned the trodden junior sailing pathway to lay a divergent path to the promised land.

Jesse Andrews, Kaneohe YC's sailing director, was an early adopter of skiff and foiling craft for his youth sailors.

PHOTO: COURTESY JESSE ANDREWS

USING the term "epic" too often makes one a kook. It's equally uncool to overhype one's sailing experiences because, let's face it, there's always someone who has won more, sailed faster or gone to a cooler place. The summer of 2022, however, was truly epic for Jesse Andrews, the Pied Piper of Hawaii's Kaneohe Bay, whose followers stormed North America and Europe, and ascended to performance sailing's world stage. Under Andrews' direction, these young sailors are charging hard in the Waszp and Olympic iQFoil classes today, and getting serious looks to fill slots on the rosters of youth and women's America's Cup development teams.

Kaneohe sailing's epic and timely ascent into everyone's collective radar has been a long time coming, but the whole phenomenon was accelerated when the US Sailing Olympic Development Program doubled down on performance youth sailing in 2022. Kaneohe, naturally, was the first proving ground.

Oahu's sailing teams were chasing ILCA and Club420 medals this past summer too, but most of the kids, whether because of geographic isolation or lack of interest, avoided the traditional path of racing in large Optimist and 420 fleets on the mainland. Instead, they began their careers with O'pen Skiff "Un-Regattas," and then went on to 29ers and eventually anything with a foil they could get their hands on.

Deconstructing how these junior programs have grown to become a new model for enabling dedicated youth sailing talent despite their isolation starts with Andrews, a once-frustrated New England kid who refused to wear shoes and ended up in the Aloha State.

In Beebe Cove, an eel-grass-filled offshoot of Long Island Sound, Andrews enjoyed a traditional sailing upbringing, flipping over horseshoe crabs, and sailing Sunfish and Dyer Dhows. His teen years on the International 420 circuit took him to Europe and Australia, which "was a great experience and lifestyle," he says. "Having the freedom to drive with other kids. Traveling and having fun is something that should always go hand in hand."

A few of his teammates went on to Olympic and America's Cup campaigns after college, and eventually for Andrews, Connecticut lost its appeal.

"I've never wanted to wear shoes in my life," he says. "I was an untraditional kid living a pretty traditional life." He was also hooked on surfing, and one winter his mother boldly moved him to California. That started to feel right, but then after two years studying and sailing at the University of Rhode Island in the early 1990s, he'd had enough of the cold—for good this time.

He enrolled in the University of Hawaii and found his new tribe on Oahu.

It's been almost 30 years since his relocation to the land of rainbows. He started coaching the University of Hawaii sailing team after graduating while filling in at Kaneohe YC until becoming its sailing director.

"I've been doing the same two jobs for 25 years," he says.

Today, he faces the same core challenge of his coaching peers: how to introduce kids to sailing and keep them sailing long after they leave the program. If he has a singular philosophy, it is to "do what the kids want."

"In Australia, New Zealand, Europe, it's easy to do what makes sense," Andrews says. "Here there's so much red tape, but in Hawaii, we listen to the kids. We have a small, great board of trustees, and when the kids asked, we brought in the foiling Waszps."

Kaneohe YC has long been an outlier to the traditions of mainland American yacht clubs. When the closest national event is a five-hour flight, it's hard to get excited for or even fund dinghy racing excursions. It's also hard to hunker down to do mundane tacking drills when there's surf to be ridden and waves to be jumped.

Ocean sports are "it" in Hawaii, so Andrews has had to be creative with keeping kids excited about sailing. That's where the O'pens came to save the day, initially. Windfoiling, winging and Waszp sailing developed while Kaneohe's groms were hitting their teens.

Andrews started “Foiling Fridays'' in 2021 to keep the kids on the water during the pandemic. “First, it was Waszps and 29ers,” he says. “Then iQFoil and wingfoil all starting at the same time. It’s inclusive. The iQ is a little faster, but if you screw up, everyone’s right on your tail. It’s been a huge hit.”

Partnering with the Hawaii Kai Boat Club, the local kids have had access to 29ers and now a fleet of iQFoil boards, which Andrews says are inexpensive and a fast track to high-performance racing skills. Hawaii Kai sailor CJ Perez is climbing through the International Moth fleet and was one of the first females to join a SailGP team as part of its Women’s Pathway Program.

“We haven’t lost the fundamentals and love of traditional sailing,” Andrews says about the junior sailing program today. “They love all crafts.”

Tapping into watersports stars and new disciplines, Kaneohe hosted a wingfoil clinic with Global Wingsports Tour champion Fiona Wylde. Local superstar and waterman Kai Lenny has even been a guest at the clubs.

Kaneohe’s sailors are now heading to Europe for Waszp and iQFoil tours. “What we were doing [and sharing] on Instagram was all good exposure, and it just exploded,” Andrews says. US Sailing took a keen interest as well and began hosting regional racing camps. “It’s amazing. Now people are coming to us. We’re in the right place, at the right time, with the right venue.”

“The Kaneohe program has a feeling of being ‘loose,’ but it’s really extremely organized,” says Leandro Spina, head of US Sailing’s Olympic Development Program. “We’ve become really good partners. It’s such an iconic sailing venue, and now with the amount of talent in the [iQFoil], it’s ridiculous.”

In 2021, Andrews’ phone started ringing off the hook. The American junior sailing universe wanted what he had. Spina organized the 2022 iQFoil camps, and the US Junior Olympic Sailing Festival that came to Hawaii hosted iQFoil and Wingfoil fleets.

Spina says Andrews’ creative training formats and commitment to new classes has inspired him to integrate this approach into his ODP. “It’s what we envision young athletes to do,” he says. “Choose one class but sail everything they can get their hands on.”

When Spina and Andrews met, they quickly started talking about Olympic pathways. Andrews’ tour of European iQFoil events last summer attracted a lot of attention, especially since four Hawaiians qualified for the gold fleet in the iQFoil Youth Open World Championships in Silvaplana, Switzerland. Then came the clinics, plans for an annual performance youth event, and an international regatta. “It happened quickly,” Spina says. “Hawaii is now a new leg on our tour.”

Spina says Kaneohe’s program opened doors to different ways to retain sailors, and using foiling to do so in particular.

“Foiling and these programs are not a replacement; they’re an enhancement,” Spina says. Optimist and 420 participation is still strong. “It creates another path to retain talent. It’s an evolution, more opportunities to keep learning. As long as they keep learning, we can retain them.”

The Hawaiian ocean lifestyle, Spina adds, is also something that taps into an enjoyment of learning. “I love to be on the water, and what we’re learning now with the fast evolution of foils is that kids are having fun,” he says. “The boards are light and small. My 11-year-old son went to Hawaii and now wants to surf. There’s no surf in Miami, so now we wingfoil surf, and I’m learning with him.”

Having CJ Perez on the US SailGP team could be enough to affirm the virtues of Kaneohe’s model. The visual of America’s Cup skipper Jimmy Spithill enjoying a wingfoil session is something that draws a direct connection between Andrews’ sailors and the superstar. Perez has made the connection, sought her own path and, with serious ambition, broken into professional sailing.

> **Jesse Andrews’ phone started ringing off the hook. The American junior sailing universe wanted what he had.**

The grand finale of SailGP’s Inspire Program, with qualification regattas held in many countries, seems to have been designed for Kaneohe sailors. And they didn’t disappoint. Pearl and JP Lattanzi qualified for two American spots in the 2022 final. Early in their careers, the siblings had Andrews as a coach in Oahu and traveled with their parents to O’pen Skiff regattas. They were nicknamed the “Flyin’ Hawaiians.”

Pearl, now finishing her college sailing career as captain of the Salve Regina University sailing team in Newport, Rhode Island, is a top-ranked Waszp sailor and candidate for American Magic’s Women’s America’s Cup team. JP is trying out for the youth team.

“I didn’t grow up sailing college boats,” Pearl says. “The skills have transferred over [in college sailing], and it hasn’t been a hindrance at all. I have a lot of opportunities outside college. I’m not thinking I’m nearing the end of my sailing career like some friends feel. That’s not me right now.”

Pearl, who also sailed with Perez at Hawaii Kai Boat Club, says the lack of big fleets in Hawaii forced her sailing diversity. “People like Jesse set us up for fun sailing, keeping us in the newest boats. I was never in a boat I didn’t want to be in.”

The optics of Andrews’ junior sailing approach look, as Spina says, “loose,” and he’s not far off. Andrews’ standard outfit is clashing Hawaiian floral prints and a comically large foam-front trucker’s cap. But this coach is in the College Sailing Hall of Fame, was awarded the Graham Hall Award for outstanding service, and is considered by his peers as one of the best. He has carefully integrated his passion for sailing into a seriously fun and outstanding package that’s now, ironically, a pathway for serious success in sailing.

Pearl says Andrews’ difference is his strength. “Jesse’s not the usual coach,” she says. “He’s so open to learning. In the beginning, we’d just have a big talk after practice. Comparing notes, watching videos online and researching. We were learning together. Now we’re both so knowledgeable about foiling and high-performance sailing. I wouldn’t have had any of these opportunities without Jesse.”

Andrews has ideas about how to expand junior sailing on Oahu. His sailors are slightly less isolated now that their secret is out. Mainland kids are coming to compete and train on the island. Hawaii Kai Boat Club, however, recently lost its lease and needs a new home, and Kaneohe YC remains too small to grow beyond its footprint.

With racing perceived as the primary ticket to the bigger sailing world, Andrews is wary of focusing too narrowly on competition. Balance, he says, is important. “We can’t take the free sailing out of junior sailing,” he says. “It’s great seeing ex-junior sailors as long-term friends with foiling and current races. They’re not passionate about competing. They love the ocean. They love foiling.”

Sailing and foiling first, competition second. That’s epic—an epic shift to the junior sailing paradigm. ■

BY DAVE REED

ALL ON THE LINE

The age of automated and tech-based starting lines and race management is now a reality.

ASK any mark-boat volunteer what irks them most about setting a start pin for a class that allows GPS-based starting devices and chances are the response you'll get is: "The pinging chaos." What a pain it is to stream or reset tackle while crews swarm like flies, yelling and banging into each other. Pinging is a modern annoyance for everyone, but the engineers at Vakaros, makers of starting devices that contributed to the problem in the first place, have finally rolled out a solution that could put an end to it.

With its new Atlas2 units flying off the shelf and the companion race-management software getting into the hands of PROs, Vakaros says the stresses of getting—and delivering—a good and fair start are fast becoming a thing of the past. Race committees and marshmallows rejoice.

"[RaceSense] is something we've been talking about for a long time, and we're now at a place where we have the technology ready and the bandwidth to focus on it," says Vakaros co-founder Jake Keilman. "We're going from it being something possible to something that will become very common."

That something is more effectively orchestrating starts using better GPS technology. That means sharper time-and-distance accuracy for the sailors and more-accurate OCS calls for the race committee. The RaceSense platform isn't all about starts, though. It can essentially manage an entire race from start to finish.

Keilman says it's a game-changer, which is hard to dispute. Modern times call for modern technology, and that technology is here.

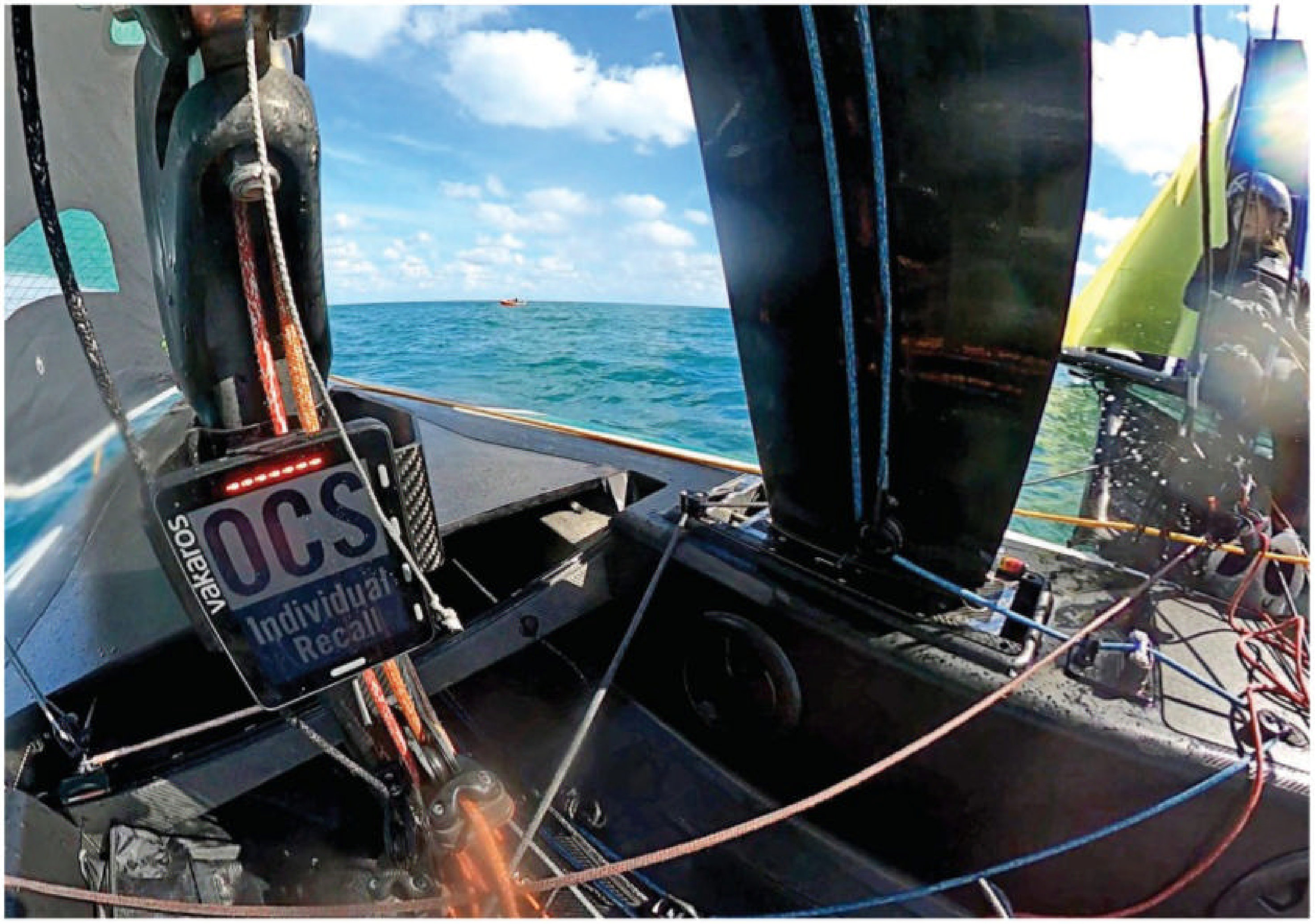
The Atlas2, a compact (4.5-by-3.5-inch) instrument, has all the essential features and then some—timer, compass, heel angle, etc., with a significantly upgraded hardware and battery package that also has been a long time coming.

"We held back on the Atlas2 to get the newer technology," Keilman says. "We're now at a place where the GPS accuracy will match or exceed the human eye calling the start line in any situation you could imagine."

Catamarans, foilers and other high-speed craft breaking the line at 20 knots? Absolutely, says Keilman. They've proven as much with test events in Miami this winter with both the M32 Catamaran and 69F classes, which use reaching starts.

Racecourse management once exclusive to the America's Cup and SailGP has been scaled for the average sailor with the RaceSense and Atlas2 platform, says Vakaros co-founder Todd Wilson.

"There were a number of challenges we had to really think about to solve. One was position accuracy, but the other was communications, which in a lot of ways was the greater challenge. Then there's the overall user experience—can they interact with the units? Can race committees send messages and other



Vakaros beta-tested its Atlas2 units and RaceSense tablet app with the M32 Catamarans and 69F Sailing Series in Miami in order to demonstrate its 50-centimeter accuracy at high speeds.

PHOTOS: COURTESY VAKAROS

data straight to competitors? Will there be additional hardware that has to be added to the boat?"

The answers are all packed into the diminutive Atlas2. The critical internal compass and sensors are the best they could source for the price, and the battery will last the duration of a three-day regatta without requiring a daily charge.

With access to dual-band GPS, they were able to solve the accuracy hurdle. Previous units relied on a single GPS signal, which is subject to anomalies in the atmosphere and can result in errors in the range of 2 meters, Keilman says. "Dual GPS takes us to 50 centimeters of error—or maybe even better under optimal conditions."

That promise of 50 centimeters of on-the-line accuracy is the tech leap they needed to make it all worthwhile. With the communications challenge sorted, they now have a device that's a lot more than your old-school starting aid, timer and compass. Race tracking and data logging make post-race debriefs honest discussions.

How does it all work in practicality? The racecourse mesh network would be set up with units marking each end of the starting line. The tablet-based RaceSense app in the race committee's hands gives the PRO a controlling view of the racecourse. They can verify the course is set, control timing, and send messages to the competitors' units.

Before the race, each competitor with an Atlas2 automatically checks in with the race committee once in range. (Although the unit does need to be registered with the race committee beforehand.) It's the equivalent of coming within hail, shouting your sail number, and waving to the committee secretary. A green light on the unit will indicate they've joined the race, and then they will receive any messages from the race committee (e.g., start time, course length, mark bearings).

Once connected, the sailor can carry on with pre-race drills. When the race committee initiates a starting sequence, a notice overrides timers and updates previous mark pings. "All the boats get a live sense of where the line is as it moves around during the sequence," Wilson says. "The competitor does not need to ping or interact with the unit at all; they just get notifications—sounds, lights, messages onscreen to keep everyone in sync."

> **That promise of 50 centimeters of on-the-line accuracy is the tech leap they needed to make it all worthwhile.**

With time, distance, boatspeed and angle displayed prominently in big black digits, there should be no reason to be over early. But it happens, and when it does, it's impossible to miss the red flashing light atop the unit and the big bold OCS on the display.

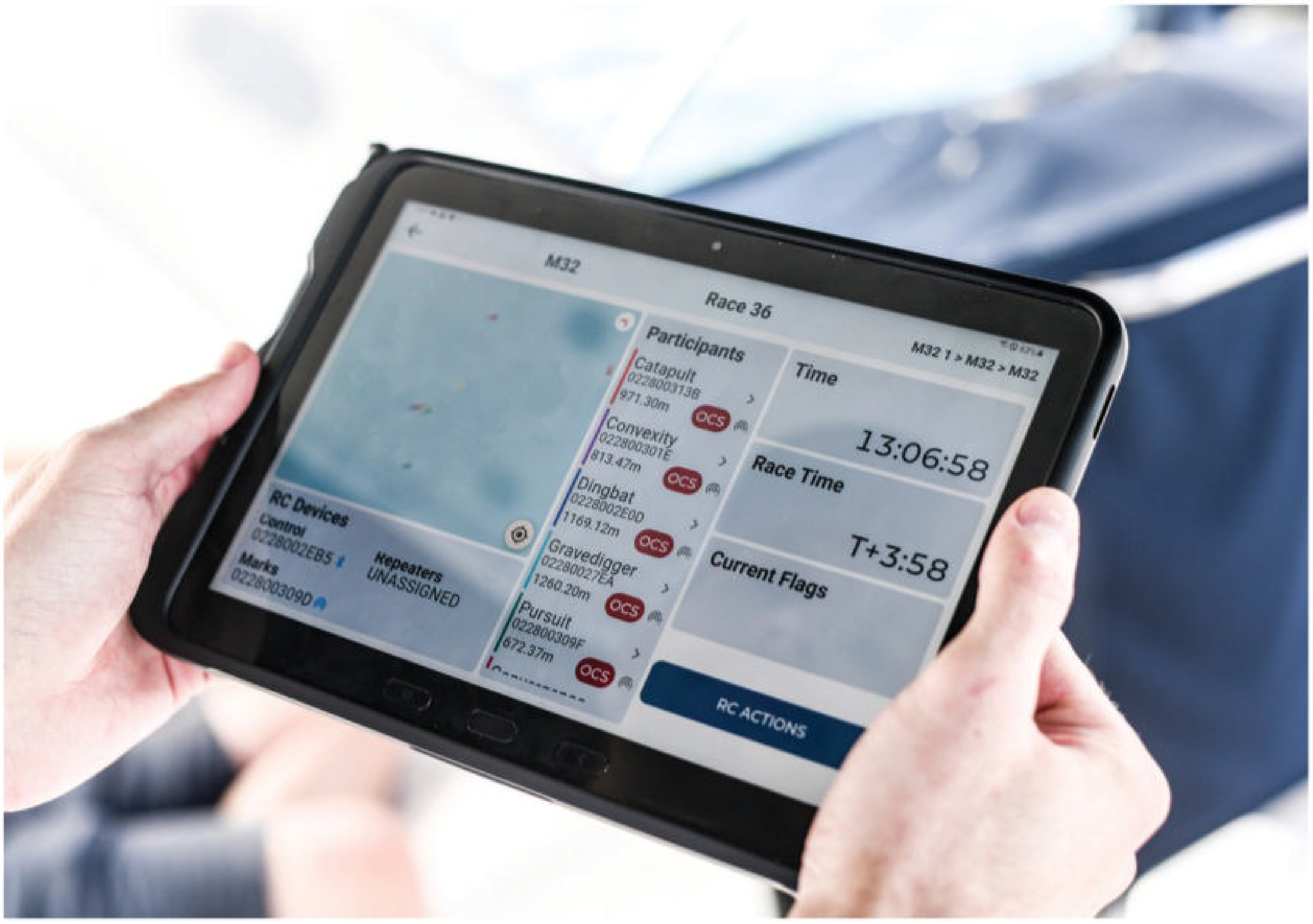
The RaceSense app shows the race committee which boats are over early (and whether they've exonerated their penalty), which theoretically eliminates the practice of ducking for cover behind an exposed boat and getting away with it. The spotter doesn't need to see you to ding you.

For classes that currently do not allow distance-to-the-line functionality, the units can be configured to be class-compliant, but the race committee can still communicate and alert OCS boats. "We're adaptable to class rules," Wilson says.

With real-world winter trials underway and an expanding list of classes and events adopting the RaceSense experiment, it's in the early days yet in terms of realizing the full potential of the device and software. But the immediate focus for Vakaros is demonstrating to rank-and-file racers the wonders of the starting application. There's functionality built into the Atlas2 that will enable a fleet to essentially run races without any race committee at all. We're talking virtual racecourses with boundaries, mark zones and recorded finish orders. "We want it to basically orchestrate the entire race," he says, "and maybe down the road, we'll be able to provide advanced tools for umpiring."

One hurdle for RaceSense implementation across a local fleet or one-design class is the universal buy-in for the Atlas2 units, which retail for $1,100. Resistance within ranks of some classes is to be expected, Wilson says. But he sees another benefit for small fleets where competitors have to occasionally sit out to run the race. "I think this can really make a difference for fleets that don't have big budgets or aren't able to bring in a big race committee team. The dream is to be able to push a button on shore, with mark bots running on RaceSense. That way, everyone who wants to sail gets to sail."

That also means the decline of pinging chaos, he adds. The only ones who will lose out will be those in the gelcoat repair business. ■



BY MARK CHISNELL

MAKING THE TOUGH CALLS

There are so many decisions to make in the course of a sailboat race, particularly offshore, where choices come with high risks and big rewards or none at all.

SAILBOAT racing is all about choices. Go offshore or hug the coast? Change the jib now or wait till the turning mark? Do we spend the budget on new sails or a coach? Every choice is a risk. Get it right and you gain; get it wrong and you lose. But this is sailing, and there is an existential element to the sport that exists in few others; sometimes the choices are more serious, and coming last in the race is the least of your problems. Just such a decision came up on the third leg of the 2017-18 Volvo Ocean Race from Cape Town, South Africa, to Melbourne, Australia.

It was December 12, 2017, and the whole fleet was sailing east, tracking the movement of a low-pressure system, when another, more ominous feature appeared in the forecast. The charts showed a new storm growing with spectacular speed and violence. By the 13th, it would be a fully formed monster with winds up to 65 knots at its core, approaching the fleet from the northwest. If they held to the optimal course, it would chase them down and run them over. Or they could jibe and take a slower, more northerly route that would avoid the worst of the weather.

There were seven boats in the fleet. Two took the northern route: *Turn the Tide on Plastic* skippered by Dee Caffari, and *Team Sun Hung Kai/Scallywag* led by David Witt. In both cases, the boats had relatively inexperienced crews (compared to the rest of the fleet) and not much training together as a group before the start of the race. In both cases, the decision to go north felt like the correct one. It was unlikely they would do better than sixth or seventh even if they had chosen to stay south. They could get that result by going north with much less risk of damage, and they might pick up a place if any of the boats that stayed south suffered damage in the storm.

The opposite was true for the top three boats on the overall scoreboard: *Dongfeng Race Team*, *MAPFRE* and *Vestas 11th Hour Racing*. They had previously taken all three podium places in the first two legs, and all three remained south. Once the storm passed, *MAPFRE* and *Dongfeng Race Team* led the fleet by over 50 miles. *Vestas 11th Hour Racing* was solidly in third place with a lead of more than 100 miles from the next boat. In all three cases, it looked like the right decision to stay south, and going north would have put them out of contention for the overall lead. They also had good reason to believe they could manage the conditions in the south and avoid a bad outcome.

This left two boats: *Team Brunel* and *Team AkzoNobel*. Neither crew lacked experience. Skippering *Team Brunel* was Bouwe Bekking, who was on his eighth attempt at winning the race. And while *Team AkzoNobel*'s skipper was a first-timer in the role, Simeon Tienpont had won a couple of America's Cups and been around the world twice before. Tienpont's crew also included Jules Salter, on his fourth race around the planet, already counting a second place and a win. Chris Nicholson, a six-time world champion, two-time Olympian for Australia, and a second-place finisher as skipper among his six previous races, was also on board.

The crews of *Team AkzoNobel* and *Team Brunel* nevertheless faced a more difficult choice than the others. On the one hand, they had every right to regard themselves as peers of those on *Dongfeng Race Team* and *MAPFRE*. On the other hand, *Team Brunel*'s crew had sailed together a lot less than those two boats, while *Team AkzoNobel* had management issues that had disrupted their preparation, which resulted in several changes to senior crew in the early legs. "You can't instantly replace those people…" Salter said when I talked to him. "If you look at this race again and again, no one has thrown the boat together six months before the start and gone out and done really well."

Despite this inauspicious background, *Team AkzoNobel* and *Team Brunel* both decided to stay south on the theoretically optimal course. By December 14, *AkzoNobel* was coming up fast on the invisible limit of the Ice Exclusion Zone (a line drawn by race officials to keep them out of known areas of icebergs). They were going to have to jibe in 35 to 40 knots of windspeed. Nicholson was steering, and with all nine of the crew in position and on deck, he went for it. "We had a bad one," he said in a video to the race office afterward. "I thought we had a good wave to go down. I should have pulled out of doing it, and we probably would have broached, but it wouldn't have been the outcome that we had…"

They broke battens and pulled the mast track away from the spar.

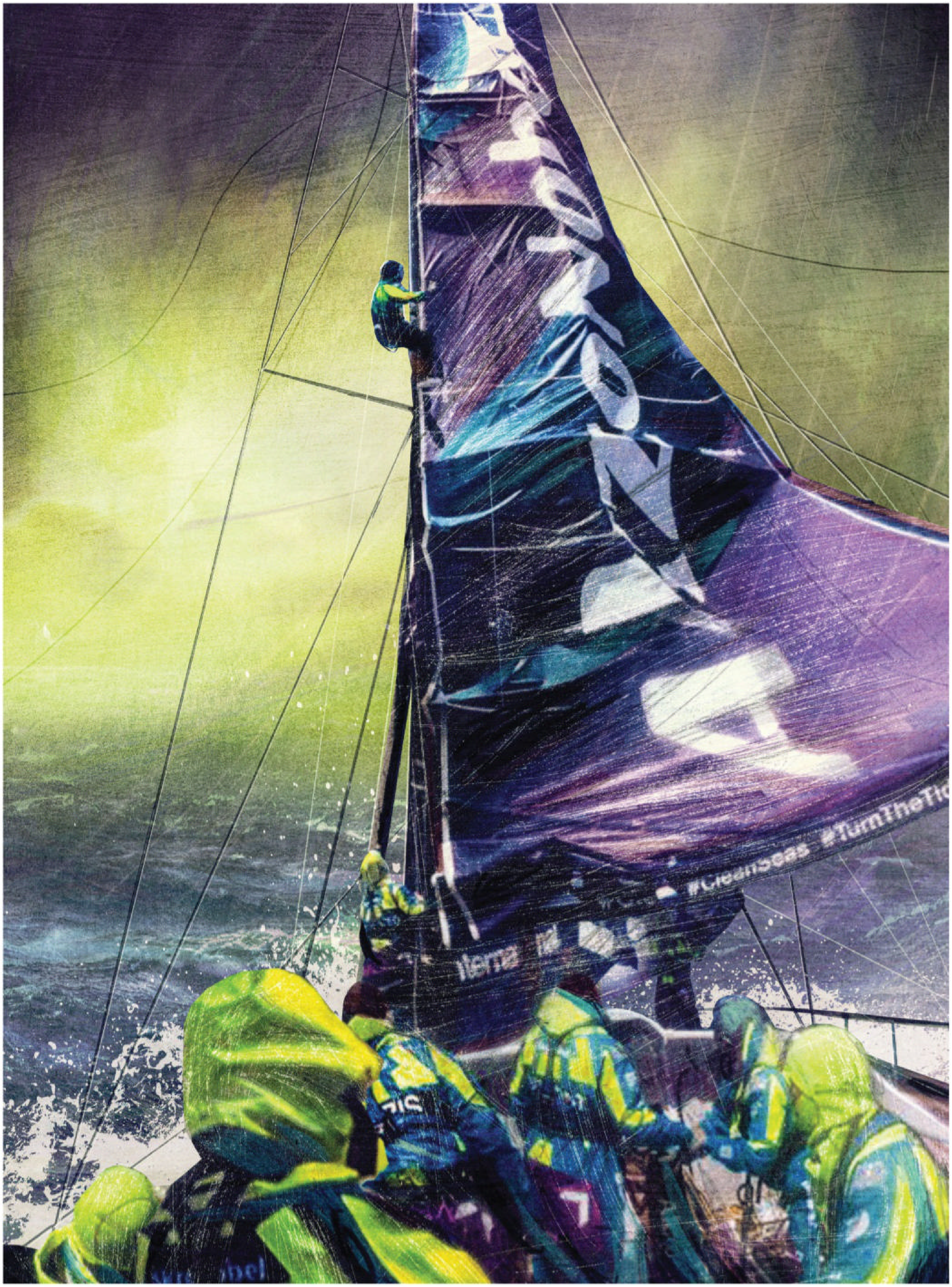
It could have been a lot worse, but it could also have been a lot better. "On another day, we might have just got away with it; we might only have broken a little bit of track and one batten, and thought, 'Oh, that was a bit on the edge and off we go.' I've done that before many times," Salter said. Instead, a crippled *Team AkzoNobel* limped into Melbourne in last place, well over three days after the leader, and immediately started the next race—against time to get the boat repaired and ready before the start of the next leg.

Team Brunel fared much better than *Team AkzoNobel*—they kept it together through the storm and finished in fourth place, less than two hours behind *Vestas 11th Hour Racing* and just over a day ahead of *Team Sun Hung Kai/Scallywag*. Both *Team Brunel* and *Team AkzoNobel* chose the fastest, southerly route; one came fourth, the other seventh and last, but—and here's the controversial part—there's an argument to be made that both boats made the wrong decision and took an unnecessary risk. It worked out for *Team Brunel*, but that still doesn't make it the right decision, and here's why: The crews did not fully set what might be gained by their choice against what could be lost. In both cases, the potential losses of going south outweighed the potential gains.

The upside of staying south was limited. Could either crew realistically hope to beat the better drilled and prepared *Dongfeng Race Team*, *MAPFRE* and *Vestas 11th Hour Racing* in those conditions? Maybe later in the race, yes. But on this first excursion into the Southern Ocean, it was unlikely they would suddenly make the jump to the podium that had eluded them in the first two legs.

So, if there was little to no chance of a third place or better, why not go north with *Turn the Tide* and *Scallywag*? They could expect to beat both of them on that same northern route, which meant they would finish fifth at worst, with every chance of moving higher

ALE+ALE/MORGAN GAYNIN


#CleanSeas #TurnTheTi

should any of the leaders have a problem or break down in the storm. And if both *Team Brunel* and *Team AkzoNobel* had chosen to go north, they would have been racing for exactly the same fourth place that they were effectively contesting in the south, but in much milder conditions with much less risk of damage or worse.

When I put this to Salter, he wasn't convinced—or maybe he was. "There is a balance—I think that showed in the next Southern Ocean leg, where we went a very similar way again, and we got to a point where we thought we're just going to back off a bit here because we know what damage can do. We did, and we dropped back a bit, not a big distance, but 50 or 100 miles behind the leading group. And on the approach to Cape Horn, we gradually caught them all up again. *MAPFRE* broke the mast track and the mainsail, and *Vestas* lost the rig soon after that as well. So, you get yourself up to third by doing that. It's just picking the right time to play that strategy—and offshore sailing is so much about that."

These are tough calls, and often they are made on gut feel—or after a long discussion that the most articulate and opinionated can win on the strength of their hand-waving skills alone. There is a better way, a way to make the decision more analytical using tools based on formal decision-making systems. The "theory of expected value" assesses the value of all the possible outcomes for each decision and multiplies each of them by the likelihood (the probability) of those outcomes. The results of each of these multiplications [value (V) x probability (P)] are then added together to give the expected value (E) for that decision: E = (V1 x P1) + (V2 x P2) and so on.

Once all the expected values have been calculated, then the decision with the highest expected value is the one to go for. It sounds complicated, but an example will make it clearer. Let's look at the strategic choices for *Team AkzoNobel* and *Team Brunel* as the storm approached. The value for the outcome (V) will be the points available for each position in the leg. These were scored in reverse, and this leg was worth double points, so the winner got 14 points, second place 12 points, and so on down to last place, which was worth two points.

We're going to make a few assumptions to keep the analysis relatively simple. So, we'll assume the rest of the fleet made the same choices they did in the race and finished the leg successfully. Two boats went north, both of whom *Team Brunel* and *Team AkzoNobel* will beat if they don't suffer damage, while three boats went south, none of whom they will beat, damage or no damage.

On the southern route, the pairs best possible result was fourth, and that would have been worth eight points. A second potential outcome was seventh and two points, if they suffered sufficient damage to stop them racing competitively but not stop racing altogether. The final possibility was that they suffered more serious damage and were unable to finish the leg, and unable to start the next one. I'm going to give this outcome a score of minus four points, equating to zero points for Leg 3 and a loss of a potential fourth-place finish in the following leg. (The next leg was not double points, so fourth scored four points.)

I'm assessing the probability of them racing hard all the way to the finish (and scoring fourth) as 60 percent, suffering moderate damage and coming last as 30 percent, and suffering more serious damage as 10 percent. So, now we can prepare a table:

SOUTHERN ROUTE

OUTCOME	PROBABILITY (P)	POINTS SCORED (V)
Fourth	60% or 0.6	8
Seventh	30% or 0.3	2
Not finishing	10% or 0.1	-4

We could build a much more complex table listing more outcomes and their probabilities, but I think the approach is clear with just these three options. So, the expected value (E) is the sum of the gains from each of these outcomes:

E = (0.6 x 8) + (0.3 x 2) + (0.1 x -4) = 5

On the northern route, the best possible score was fifth, and that would have netted them six points, with the outcome for moderate damage again seventh and two points. The outcome for serious damage was also minus four points.

While it wasn't guaranteed that they would successfully complete the leg on the northern route, the chances were a lot higher, and I'm going to call it 90 percent, with a 9 percent chance of moderate damage and a 1 percent chance of serious damage. So, the table for the northern route looks as such:

NORTHERN ROUTE

OUTCOME	PROBABILITY (P)	POINTS SCORED (V)
Fifth	90% or 0.9	6
Seventh	9% or 0.09	2
Not finishing	1% or 0.01	-4

And the expected value will be:

E = (0.9 x 6) + (0.09 x 2) + (0.01 x -4) = 5.54

This analysis produces an expected value on the northern route of 5.54 points compared to 5 points on the southern route. So, any decision based on expected value would be in favor of the northern route, supporting the earlier conclusion.

Now, maybe others would score the probabilities of damage differently—and it's worthwhile to play around with the numbers to see how the outcome changes—but there's no doubt that the analysis helps to clarify the choices. We've swapped hand-waving for assigning probabilities, and that has to improve any discussion and any decision made.

An expected-value analysis can help in other areas of our complex sport. One of the big problems facing any race-boat campaign, be it an America's Cup team or a small keelboat shooting for top 10 at the national championship, is there are more ways to improve performance than time or money to pursue them. It's always hard to make decisions about where to put limited resources when the outcomes are uncertain, and expected value provides an analytical approach, calculating an expected cost for each unit of performance gain.

The process starts by creating a list of the performance projects that are under consideration. For example, practicing for a weekend, buying new sails, or hiring a coach for the season. A simple version of the calculation would be to assess the potential speed improvement (this would be V) for three cases: the best outcome, worst outcome and most likely outcome for each option being considered. We would then assign a probability (P) to each of these possible outcomes and use these three pairs of numbers [speed improvement (V) and probability (P)] to calculate the expected value just as we did for the route choice ahead of the storm.

In this case, we can go a step further: By dividing the monetary cost of each option by its expected value, we can generate a cost-effectiveness ratio. This allows us to tackle the issue of balancing resources in a parallel way to balancing risks—and expected value can be just as useful in revealing the trade-offs. There are limitations to the approach; for instance, there is no allowance for how these gains will degrade with time. Nevertheless, it's still a great way of tackling any problem where resources are being assigned in uncertain circumstances—just one of the many tough calls in sailing that the concept of expected value can help to illuminate. ■

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WHAT'S OLD IS NEW

The venerable and unique Ray Hunt-designed International 110 is getting a redo.

THERE must be something in the soil at Point Farm in Warren, Rhode Island. On this land, Steve Clark has reaped everything from traditional dories to C-class catamarans to International Canoes, and all sorts of genetically modified vessels in between. His latest crop is a brand-new International 110 crafted from sheets of mere marine plywood.

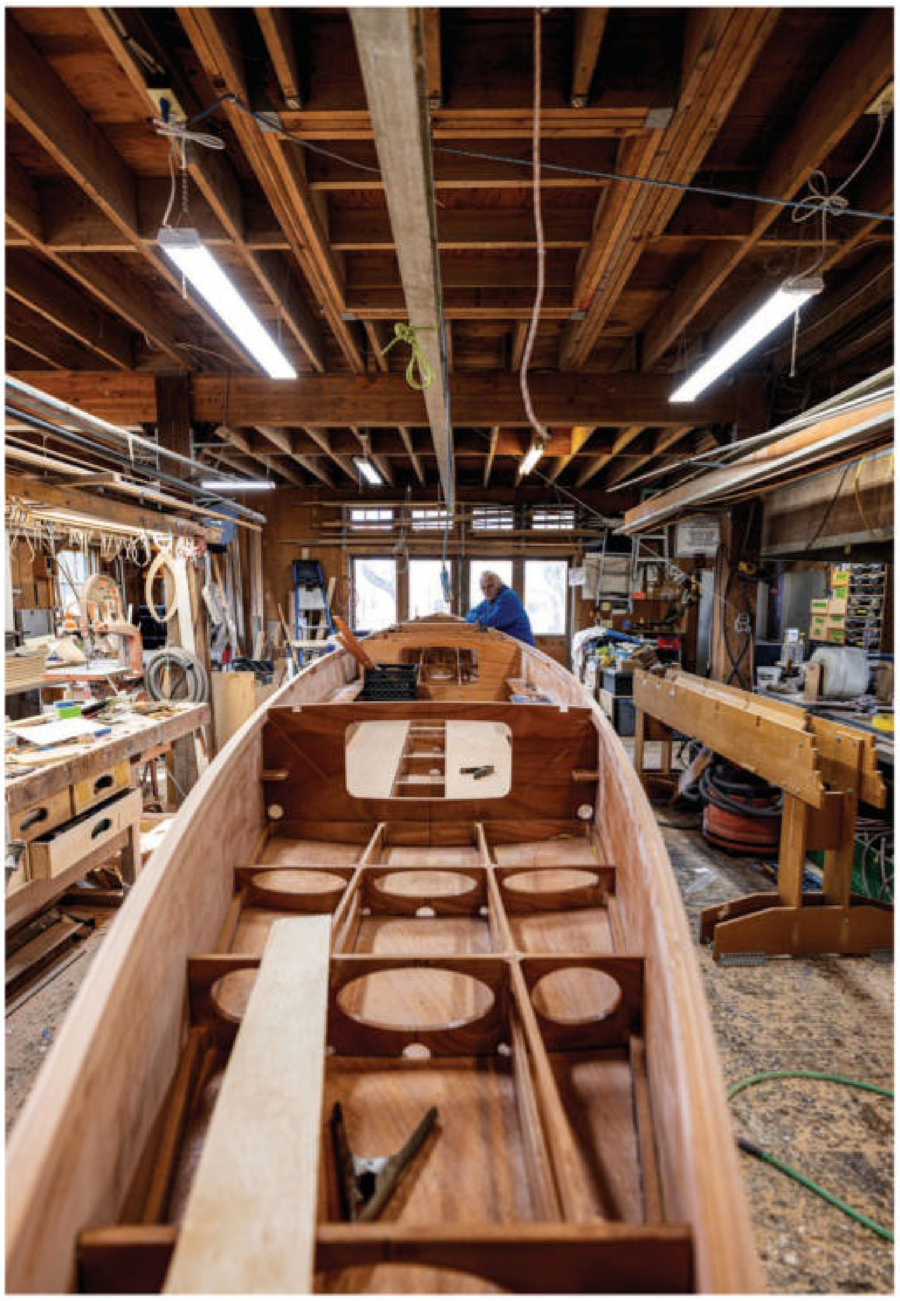
Members of the International 110 class talked about the creation of a kit boat for decades. When Clark rejoined the class, the dream became reality in short order. As the previous co-owner of Vanguard Sailboats, Clark was accustomed to building 3,000 sailboats per year. In the glory days, it took his firm about 18 hours to build a Sunfish.

Why is he putting his time and talent into building a kit for a one-design first built in 1939? With a mischievous grin, Clark says: "It's the same reason why a dog licks his balls. Because he can."

At the age of 69, Clark is retired and still enjoys boatbuilding. He came back to the 110 because he saw it as a "geezer Canoe."

"My competitive days in International Canoes are fewer than they used to be," he says. "And I also wanted to be able to sail PHRF on Wednesday nights and navigation races. The 110 qualifies."

Clark views the International 110 class as his client, and his goal is to build a quality boat that is as fast but not faster than existing boats. The first question he had to answer was what shape to make the kit boat? Clark brought in Kasey Brown, who was a collaborator on previous projects, and they scanned a fiberglass International 110 built by Westease in Holland, Michigan. "The 3D scanning is remarkable," Clark says. "Kasey set it up. The thing bounces light off the boat. We get a raw scan, then we run it through a fairing program on the computer."



Master boatbuilder Steve Clark's latest creation is a kit-build, class-legal International 110, which he started with a 3D scan and built in his boat barn in Rhode Island. Builders on the West Coast are taking a different approach to their 110 project. PHOTOS: JOE BERKELEY

After the shape was approved by the 110 class technical chair, Clark worked on how to build the inside of the boat, spending a lot of time creating different layouts on the computer. Along the way, there were numerous obstacles to overcome. One of them was when Clark had a heart attack in June 2022. Another was the chine log. The original wooden 110s had a complicated chine that came out of a shaper. Back in the day, the builders had a large industrial machine to shape the chine. They also had a seemingly endless supply of 25-foot-long pieces of clear Douglas fir. Neither the shaper nor the stock is available.

Clark solved this challenge by treating the chine more like a stitch and glue boat. He covered the edge of the boat with a small chine, then carved a radius into it using a power plane. "It's the same technique you use for making a round mast. You start off with a square, you cut 45-degree corners, and you sequentially facet the radius. After you've done that twice, you are within sandpaper of the right radius."

Clark went through eight or nine iterations of the construction design until he was happy with the layouts. The files were prepared to be cut on a CNC machine. In the past, Clark has done the same thing with sailing canoes, noting that it is easier to ship files than big, bulky molds. "I've had guys in Australia build boats that I designed," he says. "I send them a compressed file, and away it goes."

Chesapeake Light Craft cut all of the plywood to build the hull and delivered it in a flat pack for $5,600. Clark sees this technology as a game-changer. "It used to be you had to draw the boat full size on the floor, correct all the shapes. That was a week or two of lofting. Now you can do it all in computers, get the parts cut accurately, then set them up and go."

With the assistance of fellow boatbuilder Bro Dunn, Clark believes his kit-boat International 110 will be completed by May and racing this

summer. The response to the project has been positive, with many of the faithful making the pilgrimage to Clark's barn and laying hands upon the boat. "People are excited to see a new 110 take shape. The 110 class has a large alumnae," Clark says. "There's a great deal of nostalgia."

But he's not just looking back. He has a plan for the future. Out back, Clark has seven vintage wooden 110s that could use some love. He hopes to create a program with the nearby Herreshoff Museum such that teenagers and young adults can get a boat, learn how to take care of it, then go out sailing. The talks with the museum have been positive, and there are still details to be finalized.

On Bainbridge Island, 3,000 miles away just west of Seattle, Fleet 19 is building a prototype 110 from a kit it developed independently of the Clark project. Its approach to 110 construction uses a combination of fiberglass-covered foam and marine plywood. Brandon Davis of Turn Point Design in Port Townsend, Washington, is deeply involved in the project. He knows his way around a build. He has worked on four America's Cup campaigns, aerospace projects, rockets, satellites, submarines, flying cars and small-boat kits.

"The 110 has traditionally been built with a tortured plywood bottom and deck," Davis says. "To spring the shape into the ⅜-inch plywood took quite a bit of force, requiring strong internal frames, 12 big trucker ratchet straps, boxes of screws and lots of persistence."

To simplify the build, the Fleet 19 team chose a 100 percent recycled PET foam core because it was easier to shape. That decision meant there needed to be less internal structure, which resulted in a quicker build.

There were ease of ownership considerations as well. "Most trailerable boats sit in the backyard over the winter and, if they are not tarped perfectly, will gather rainwater in their bilge. That can spell the untimely end to a plywood boat. With a foam-core International 110, you will not have to worry so much about rainwater," Davis says.

The Seattle team's plan is to have the first hull ready, which is already built and certified by the class measurer. They're keen to rig it and do some testing to make sure their boat is not "unfairly fast."

Like Clark, the Seattle-area 110 sailors are drawn to the International 110 because of its simplicity. Many of them are coming from the 6 Meter yachts, which are substantially more complex and expensive than Ray Hunt's venerable design.

Milly Biller is the president of the 110 class, and she has rebuilt at least a dozen vintage 110s for her Inverness, California, fleet. She's running out of old boats to repair, so she is thrilled to have new options for new sailors all over the country. ■

If the walls of the Clark family barn could speak, they'd regale of intellectual shop talk, trial and error, and Yankee stubbornness. Clark's International 110 project brings another story from the farm. PHOTOS: JOE BERKELEY

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MIGHTY

The most popular shorthanded ocean-racing machines are coming of age and pushing design into new corners of the box rule, for better or worse.

By James Boyd

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MITES

FOR sailing fans visiting from outside France, the Route du Rhum is a cultural shock, barely to be believed even once seen. It is France's oldest singlehanded race, first held in 1978, and run every four years from St. Malo in northern France 3,500 miles across the North Atlantic to Guadeloupe. The fleet of 138 boats that assembled for the start in November 2022 was incredible, with an estimated value of 260 million euros—from the implausible 100-foot Ultime trimarans to a record fleet of 38 IMOCA 60s and a similarly impressive fleet of 55 Class40s. Dock sides are crammed with spectators, many hoping to catch a glimpse of the top skippers—some are genuine sports stars. Had the 2022 start not been delayed, French President Emmanuel Macron was to have attended. It's that much of a big deal.

In the days and hours before the Route du Rhum started, more than 1 million people passed through its race village in St. Malo. In this environment, even non-French amateurs, such as the two US Class40 skippers, Alex Mehran and Greg Leonard, gained celebrity status with relentless autograph signing, selfies with fans and press interviews. Usually outshone by the bigger, higher-profile boats, the Class40 is the most successful 40-footer of all time. While the Farr 40 never topped more than 40 boats at a world championship, this is the second Route du Rhum in which more than 50 participated. To date, 192 Class40 hull numbers have been allocated.

While "Open 40s" once competed in the OSTAR and Around Alone, the Class40 came about independently. Born in France in the early 2000s, two designs defined the class: the Pogo 40 and the Jumbo 40. But the success and longevity of the Class40 is due to its highly constrictive box rule, drafted by a group that includes wise French sailor and journalist Patrice Carpentier, which remains robust 18 years on.

The box rule's basic parameters are a maximum length overall of 39 feet, 11 inches; max beam of 14 feet, 9 inches; draft of 9 feet, 10 inches; average freeboard of 3 feet, 6 inches; max mast height of 62 feet, 4 inches; max working sail area of 1,238 square feet; minimum displacement at 10,097 pounds; and max water ballast of 1,653 pounds per side. Most brutal are the materials limitations: Carbon fiber, aramid, honeycomb cores and pre-preg resin are forbidden from the construction of the hull, deck, interior structure and fittings; go down below on one and, joyously, thanks to the GRP construction, it is not coffin black.

Carbon fiber is permitted for the mast, boom and bowsprit, while standing rigging must be steel rod. Sails are limited to eight, and all but two and the heavy-weather jib must be polyester and nylon. A single fixed keel and as many as two rudders are permitted, but daggerboards and foils are banned, as are canting, rotating masts, mast jacks, and adjustable or removable forestays. However, complex kick-up rudders are permitted. (Although their effectiveness to kick up in a collision is allegedly dubious.) Over the years, displacement and average freeboard have slightly reduced, but the biggest rule amendment has limited "how scow" Class40 hull shapes can be. While the latest foiling Protos in the Classe Mini (the "flying bathtubs") are fully flat-bowed, Class40 has two max beam limits just short of the bow to prevent this. Naturally, costs have risen, but the rule has successfully limited them; today, a top Class40 costs 700,000 to 800,000 euros.

Those sailing the Class40s in the early days were a mix of pros and amateurs. Today professionals on sponsored boats are the majority. As for aspirant French pro sailors, the Class40 has become a significant stepping stone between from the Classe Mini and Figaro circuits to the IMOCA.

As skipper of *Groupe SNEF*, leading Mini and Figaro skipper Xavier Macaire says: "The transatlantic races like this [Route du Rhum] are very interesting to us, and the boat is not very expensive. The Class40 is easy to maintain and prepare, and is not a complicated boat like an IMOCA where you need 12 guys. With this, you need two or three, not full time. It is an easy, fast boat."

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FRA 185
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ENSEMBLE, AGISSONS!
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PROJECT RESC

Figaro sailors, including Luke Berry on *Lamotte-Module Création* (previous pages), are migrating to the Class40 for its good value, simple boats and highly competitive racing.
PHOTO: JEAN-LOUIS CARLI

With more top pros like Macaire joining, 30 new Class40s have been launched in the last four-year cycle. The most recent Route du Rhum podium, for example, comprised two-time Solitaire du Figaro winner Yoann Richomme (*Paprec Arkea*) and Mini Transat winners Corentin Douguet (*Queguiner-Innoveo*) and Ambrogio Beccaria (*Allagrande Pirelli*) of Italy.

Of the French classes, the Class40 and the Mini remain the most cosmopolitan, with entries from other European countries, notably Italy at present, while the United States, Australia and South Africa were also represented in the Route du Rhum. Far from being put off by the pro element, Americans Alex Mehran and Greg Leonard were thrilled to be on the same starting line. "It is such a privilege to race against some of the top offshore sailors in the world," says Leonard, who hails from Florida. "It is like playing football against a first team in the NFL—it is that level of quality. There are not that many sports you can do that in."

Both American skippers came to the Route du Rhum from similar paths. With his Mach 40.3 *Kite*, Leonard is a professional economist originally from Texas. He campaigned a J/120 for many years with his remarkable son Hannes, who raced his first doublehanded overnighter with his father at age 13. Now 18 and with thousands of race miles under his belt, both in the US and Europe, he is a Class40 expert. For his father, the Route du Rhum was his first singlehanded race.

Over the years, several top shorthanded sailors, notably British Vendée Globe skippers Mike Golding and Miranda Merron, have raced with him, also coaching him. He is very enthusiastic about the Class40: "They are beautiful boats, such fun to sail. When we delivered her to St. Malo, we had 28 to 40 knots just aft of the beam, and we just hung in the low 20s boatspeed, and it was finger-light steering."

Mehran skippers *Polka Dot*, which has the perfect pedigree, being Yoann Richomme's 2018 Route du Rhum winner—a Lift V1 design. Growing up as part of the St. Francis YC Laser squad and subsequently a Brown collegiate sailor, he met Welsh Class40 designer Merfyn Owen in 2009 and raced one of his designs. Remarkably, he won his first major singlehanded race, the 2009 Bermuda 1-2. He subsequently graduated to an Owen Clarke-designed Open 50, in which he set a record in 2012's singlehanded Transpac. He then went off, had four kids, and developed his commercial real estate business before getting the itch once more last year. He competed doublehanded with Owen in the 2021 Transat Jacques Vabre on an old Class40, but as Mehran puts it, "We needed to get something scow."

He too has been receiving coaching from Merron and Golding, among others. According to Mehran, one of the most difficult things to explain to those back home is less the offshore-racing fever that afflicts French fans, but that their skippers are not multimillionaires. Instead, they come from a wide age group and all have commercial backing to either buy a secondhand boat or—if they are higher-profile, more accomplished or just plain lucky—build a new one. So, returning to the Route du Rhum podium, Paprec's business is waste disposal (admittedly, its owner races his own Wally 107), Arkea is banking and insurance, Queguiner is building materials, Innoveo is an app-development platform, and Pirelli makes tires (its CEO has a Wally 145).

Over the last two decades, the Class40s themselves have evolved, despite Draconian design limitations. What started as cruiser-racers with fitted-out interiors became racer-cruisers and are now refined pure racers. They may not be black inside, but the build quality of the latest-generation designs is of the highest standard, and it seems no longer possible to buy a cruiser-racer.

A delight of the Class40 is that no one designer is dominant;

MARFRET
COMPAGNIE MARITIME
les Sables d'Olonne
AGGLOMÉRATION
1% FOR THE PLANET
ROUTE DU RHUM
DESTINATION GUADELOUPE
TEAM SNEF
SNEF

eight different designs make up the 30 boats built over the last four years. Pogo Structures, last of the original builders, is on its fourth version of its Pogo 40, the S4, designed by Emirates Team New Zealand's naval architect, Guillaume Verdier (who also designed Structures' scow-bowed flying Proto Mini).

The man who developed the first blunt-fronted scow Mini, David Raison, produced the Max40, built by JPS in La Trinité-sur-Mer. Also built by JPS are Sam Manuard designs—the Mach 40.4, such as the 2021 Transat Jacques Vabre winner *Redman*, skippered by Antoine Carpentier (nephew of the original rule's writer), and now its evolution, the Mach 40.5, of which two competed in the Route du Rhum.

In 2020, VPLP made its first foray into the class with the Clak 40, built by Multiplast, of which four raced in the Route du Rhum, the top finisher being Martin le Pape's Fondation Stargardt. Etienne Bertrand, another successful Mini designer, had two Cape Racing Scow 40s in the race, while *Allagrande Pirelli*, believed to be the most expensive of the latest crop and campaigned by last year's Mini Transat winner, Ambrogio Beccaria, is an all-Italian affair designed by Gianluca Guelfi and built by Sangiorgio Marine Shipyard in Genoa.

PAPREC
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ARKEA
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However, after the recent Route du Rhum, nosing in front in the design race is Marc Lombard with his Lift V2s, of which seven were racing, including Yoann Richomme's winner, *Paprec Arkea*. Lombard is one of the longest continuous players in the Class40, and has worked with Tunisian manufacturer Akilaria on its RC1, RC2 and RC3 models since 2006, of which 38 were built. His latest designs have been the Lift, introduced in 2016; *Veedol-AIC*, one example, took Richomme to his first Route du Rhum victory. The Lifts were custom-built with a hull and deck made by Gepeto in Lorient, but finished off by the V1D2 yard in Caen, and were more precisely engineered and built than the Akilarias. They were superseded this cycle by the Lift V2, the most popular of the new Class40s, with seven competing.

For Richomme, the Route du Rhum was a small distraction from having a new IMOCA built. He entered the Route du Rhum to defend his title and stay race-fit. If the first Lift was an early scow, the present one is at the limit, to the extent that it has a bump in the hull 2 meters aft from the bow at the limit of where the Class40 rule restricts the max beam to prevent such extreme scowness.

***Groupe SNEF*, skippered by Xavier Macaire, is a Verdier-designed Pogo S4 (opposite). Solitaire du Figaro winner Yoann Richomme claimed his second Route du Rhum aboard a Lombard Lift V2 design.** PHOTOS: ELOI STICHELBAUT (ABOVE), VINCENT OLIVAUD (OPPOSITE)

The scow bow provides more righting moment, but it also does interesting things to the boat's hydrodynamics. "With a pointy bow, the keel is more angled and creates more drag," explains Richomme, who is also a trained naval architect. "When a scow heels, the hull is almost parallel to the keel, so sometimes when we go over the waves, we can feel the keel shudder when it is producing lift. The chine is low and therefore very powerful, and when we heel, it makes for a very long waterline length. Also, we have very little rocker, whereas other [new] boats have a lot, which creates a lot of drag so they don't accelerate so well when they heel."

The Lift V2 "is a weapon reaching," Richomme says. "We can hold the gennaker higher than we used to. Last time, I didn't even take one. But with the power going up, so have the loads, and we are having problems with the hardware. I have broken two winches already."

A downside of the big bow and straight chine is downwind, where the technique seems to be preventing the bow from immersing. *Paprec Arkea* is typically trimmed far aft, including the stack and the positioning of the 1,653 pounds of water ballast (most new boats have three tanks each side), while its engine is 19 inches farther aft, and the mast and keel 11 inches farther aft than they were on his previous boat. They are 77 pounds below the minimum weight, which Richomme admits may be too extreme—during training they broke a bulkhead.

Otherwise, their increased cockpit protection is most noticeable on all the new designs (although not to IMOCA degrees), while most have a central pit area with halyards fed aft from the mast down a tunnel running through the cabin. On *Paprec Arkea*, a pit winch is mounted just off the cockpit sole. With the main sheet and traveler lead there as well, Richomme can trim from inside the cabin.

Most extraordinary about the scows is how fast they are. Anglo-Frenchman Luke Berry, skipper of *Lamotte-Module Création*, graduated from a Manuard Mach 40.3 to a 40.5 this year and says: "It is a massive improvement both in speed and comfort. Reaching and downwind, we are 2 knots faster, which is extraordinary."

The top speeds he has seen are 27 to 28 knots. "Most incredible are the average speeds—higher than 20."

This effectively turns yacht-design theory on its head, with waterline length and hull speed having less effect upon defining the speed of a boat that spends so much time planing. On the Mach 40.5, the waterline is just 32 feet, with a length overall of 39 feet. Compared to the Lift V2, it has more rocker, supposedly making it better able to deal with waves.

Nowhere is the speed of the latest Class40s more apparent than where they finished in the Route du Rhum in comparison to the IMOCA fleet. *Paprec Arkea* arrived in Guadeloupe ahead of 13 IMOCAs, or one-third of the way up the IMOCA fleet. Richomme says he used to sail on a Lombard-designed IMOCA 20 years ago, when they would make 10.5 knots upwind. "On a reach, I reckon we are faster than them now. We can do 20 to 22 knots average speed."

Ugly seems to be quick, but when it comes to the Class40, beauty is in the eye of the beholder of the trophy. ■

WIND-DRIVEN

FOR THIS YOUNG AND DETERMINED PROFESSIONAL SAILOR, OPPORTUNITIES AWAIT.

BY MICHAEL HANSON

Three hours after the start of the Fort Lauderdale to Key West Race, Cole Brauer decides to switch up the game plan. "We can't race the same way as everyone else because we don't have a full crew," she vents. "I have to remind myself of that."

For the past 20 miles, Brauer and her teammate, Cat Chimney, have been short-tacking the Class40 *First Light* down the Miami coast to avoid the Gulf Stream, which travels north at 4 knots. With a southeasterly breeze building offshore, they must balance current relief with stronger wind offshore, choosing when to tack toward the beach and when to head out for fresh breeze. But with every tack, the competition increases their lead. Class40s aren't known for stellar upwind speed, and the fact that Brauer and Chimney are doublehanding only makes the maneuvers slower.

"The conditions aren't the same for everyone all the time," Chimney responds. "I'm happy for a split here if that's what you want to do."

This is the duo's first race together, and they are still getting a feel for their roles on the boat. Before today, the two had cultivated a strong professional friendship racing against each other in Class40s, often helping each other fix things before the starts of big races. A few weeks before the Fort Lauderdale to Key West Race, the Magenta Project sent them to a training session on

Cole Brauer helms the doublehanded Class40 *First Light* during the Fort Lauderdale to Key West Race.

PHOTO: MICHAEL HANSON

the Canadian Ocean Racing Team's IMOCA 60, and they instantly hit it off as teammates, deciding then and there to do more doublehanded racing together.

"All right, let's go for a tack," Brauer says. "We're not going to gain by following."

They set up at the back of the boat, with Brauer breaking the jib from her seat at the helm and Chimney trimming the new sheet on the other side.

"OK, autopilot is off," Brauer says, clicking the remote-control puck strung around her neck.

"Copy."

"Three, two, one, tacking."

The boat's bow swings through the breeze, and soon enough they're headed out to sea. "Nice tack, Cat," Brauer says, settling the boat onto its new heading.

For Brauer, this race is the latest development in a relatively short career in pro sailing. At 100 pounds and 5-foot-nothing, Brauer is a small person with big aspirations, yet what she lacks in size she makes up for in grit. Beginning as a boat captain, the 28-year-old has become a fixture on various sailing circuits, from distance racing to Etchells, J/70s and Melges 24s. In some ways, she's a typical sailing bum, living in a built-out van so she can go where the wind and the gigs take her. Her career has already had many twists and turns, and she has big plans.

Brauer came late to the sport as a walk-on crew at the University of Hawaii. "I remember when I got to that first practice, people were surprised I was a girl because of my first name," she says. "By then I was used to it, though. People still think I'm a boy if they haven't met me in person. It's common in this business."

After graduating as a three-time scholar athlete with a degree in food science with a focus in medicine, medical school seemed like a logical next step. But the 2018 Pacific Cup sent her down a different path. "It was my first big offshore race," Brauer says, "and when we got within 25 miles of shore, I got a blip of cell service, called my mom, and told her I wasn't going to med school. I was going to go sailing instead."

Her parents were less than stoked about their daughter abandoning a medical career to bum around on boats, but Brauer stuck to her decision, spending the year after graduation as a detailer, scrubbing teak with toothbrushes and making little money for it. "I was kind of on the struggle bus," she says. "I could barely pay rent."

She moved back to her home port in Boothbay Harbor, Maine, to search for sailing jobs. She was coaching to get by when she met a boat captain named Tim Fetsch, who initially wanted nothing to do with her when she asked for an apprenticeship.

"I convinced him by telling him I was small. I fit into tiny spaces, and I'd do absolutely anything to get a job," she says. After a few weeks of steady badgering, Fetsch relented and gave her a job working on a Swan 42, her first bit of real nipper work. She took up every task thrown her way, cleaning bilges so well you could eat off them, whatever she had to do to make sure she was going to have a job the next day.

Fetsch worked for the US Merchant Marine Academy Sailing Foundation, where he managed about a dozen boats for charters and racing. Brauer started going up and down the East Coast doing deliveries on random boats, from Melges 32s to 80-foot racer-cruisers. "Usually when you're a nipper, you're only working on one boat under one captain," Brauer says. "And now I was working under one boat captain, but we had a bunch of boats that we were working on."

Fetsch taught her everything she knows, from engines to electrical. He made her install her first 110-volt outlet on a Swan 66. He taught her to see every day as a tryout and to never get too comfortable in her position. "He was brutal," Brauer says. "But he made sure I stayed honest, made sure I worked hard and never got cocky. Looking back, Tim is the best thing that's happened to my career. I still use those lessons today."

Brauer worked for Fetsch for a year and a half. One day, they were walking through New England Boatworks in Portsmouth, Rhode Island, when Brauer spotted a sorry-looking Classe Mini 6.50 sitting on a trailer beneath a tarp in the boatyard. By then she'd been itching to get into singlehanded racing. She'd done some doublehanded offshore sailing in Hawaii, and she'd been doing doublehanded deliveries with Fetsch, but she wanted to take things to the next level. The Mini turned out to be a Foundation-owned boat, so she asked Fetsch if she could fix it up and campaign it.

Once again, he brushed her off, but Brauer remained persistent. Eventually, she finagled a deal with Warrior Sailing, also run through the USMMA Sailing Foundation, to refit the boat to take veterans out to learn the ropes of offshore sailing. "I don't know if [the people at the foundation] completely believed I could do it," Brauer says. "But they were like, 'We'll give her this boat and see how she does. She'll probably give up eventually.'"

But Brauer didn't give up. By then she'd started to have this insane idea. No American woman has ever raced singlehanded around the world, and she began to think she could be the first. "I get into a rhythm when I'm singlehanding," Brauer says. "Everything just flows, and it works. I feel the boat, and the boat feels me. We kind of work as one, so I'm never really alone because I have the boat there."

Eventually, she got the Mini completely refit and ready to do some serious offshore racing. But two weeks before the 2019 Bermuda 1-2, the foundation pulled its support, even though Brauer had paid the registration. "That absolutely crushed me," she says. "I ended up stepping away from the boat after that."

As fate would have it, she'd met Mike Hennessey on the dock earlier that season. Hennessey owned a Class40, *Dragon*, and

Cole Brauer has intentions of an around-the-world solo race campaign, to be the first American woman to do so, and has been putting in the hard miles to gain the experience and credibility she needs to get there.

PHOTOS: MICHAEL HANSON (ABOVE), PAUL TODD/OUTSIDEIMAGES.COM (OPPOSITE)

Brauer started doing deliveries for him when his boat captain quit. Straight away, she badgered him for the job. "I could tell that Mike didn't want me to take the job at first. I was 24, and I was a girl, and I was small. All these boat captains were big, 250-pound dudes in their 30s."

Like others before him, Hennessy relented, and the two have been working together ever since. That isn't to say it's been an easy ride, however.

There's a special kind of romance attached to shorthanded ocean racers, often viewed as brawny lone-wolf cowboy types who, for whatever reason, choose to battle their demons alone on the ocean rather than face them on land like the rest of us. Brauer doesn't fit this mold. She's good with people, even though she's better with boats. She isn't brawny by any means, and in cases where some men might force a repair or rigging job with brute strength, Brauer makes better use of her brain.

"You're always going to have a tool, even if it's the wrong tool," she says. "Sometimes I'll use a winch handle instead of a screwdriver if I have to."

She plans her day to the minute, not the hour, and every task she does has a procedure, usually sketched out in long and detailed lists. Her life is not about gazing at sunsets or counting shooting stars, but about engines and electrical, and hauling sails around with halyards because she isn't physically strong enough to do it by hand. It's about climbing into the rudder compartment when the autopilot jams and pressing her back against the bulkhead to wriggle loose the ram from the tiller bar while the boat lays over with the kite still up, then having to go back on deck and wrangle in the pieces of a freshly broken tack clutch without getting her teeth knocked in. It's about sitting in a harness with her legs falling asleep because she has a job to do up the mast, fighting the urge to let herself off the hook and go back down because there's no shot she's climbing back up to do it later, not when it's blowing 20 knots with zero-degree temperatures. It's about knowing that whatever comes her way, no one is there to save her if she fails.

All these lessons came into use when Brauer and Hennessy lost their rig in the 2022 Caribbean 600. They'd installed brand-new rigging before completing the eight-day delivery to Antigua, but "the problem with brand-new equipment is you're going to have teething pains," Brauer says. "It's the same with a brand-new engine. You have to stop every few miles and make sure everything is working properly. You trust but verify, and in this case, I didn't verify."

After rounding St. Barts during the race, Brauer went below to rest before she planned to hoist the Code 5. She thought they'd hit a weird wave when Hennessy began yelling, "Rig down, rig down!" Before going below, the sun was behind the mainsail, but when she glanced topside, the shade had completely vanished. When she came up, the rig had toppled over to one side. They lashed the boom to the boat and tried to get the main down, but Class40 mains have luff cars and full-length battens. The only way they could have taken it off would have been to get in the water and unwind the battens. Jumping into the ocean was not an option, and the sound of carbon and fiberglass crunching became debilitating. Brauer had never heard anything like it, and to this day, it is the worst sound she's ever heard. When one of the winches they were using to keep the mast in the boat started pulling off the deck, they knew they were running low on options.

"Mike and I made the quick decision that we were going to lose the rig," Brauer says.

The two began cutting halyards and unpinning side stays, trying to save anything they could salvage. "I had gone over my safety procedures for so long," Brauer says, "so I knew where the bolt cutters were. I knew where the knives were."

Brauer had to hit the last turnbuckle with a hammer when it got to the final thread, and after cutting more lines, they picked everything up and threw it overboard.

They've rebounded in a big way, however. Hennessy ended up replacing everything and getting *Dragon* race-ready before deciding to build a brand-new Class40 to race in France this summer. He sold *Dragon* to Frederick K.W. Day, owner of the Class40 *Longbow,* who renamed the boat *First Light.* Day still allows Brauer to race it as their sparring partner, with the Fort Lauderdale to Key West Race serving as their first outing together.

By the time Brauer and Chimney reach the finish, the sun has been up for two hours. The two didn't end up finishing as strong as they'd hoped, but the main goal for this race was to arrive in one piece and see how they vibe as a team. In that sense, the test was successful, and morale is high as they tie *First Light* to the dock.

"What Cole is doing is really unique for her age," says Chimney, who is eight years her senior. "She's come into this at a really important time for women in sailing, and she deserves a lot of respect for leveraging it the way she has. These opportunities weren't available or the culture wasn't right when I was her age doing similar things.

"Everybody navigates pro sailing in different ways," Chimney continues. "There's no science behind it. It's not like you go to college for four years and come out with a career-track job. It's all about putting yourself in the right place with the right people and doing the best you can, and I think Cole is crushing it in that sense."

Although she's got some sweet gigs for the time being, Brauer has her mind set on a solo circumnavigation. She has a designer in mind to one day build an IMOCA 60 to fit her size, and in the meantime, she'll use the Class40 to rack up miles. She will continue to ignore those who doubt her because deep down, only she knows what she's capable of. She could have taken a different path, could have gone to medical school and worked a nine-to-five, could have lived in a house instead of a van. But there's a moment she is constantly pursuing, a moment she relishes. It's those first few seconds after making the correct decision to do a sail change, when the wind does what it's supposed to and the boat picks up speed, when the sail fills and the autopilot catches and the hull surfs down a wave. This is the feeling she's chasing. This is the place she calls home, and home is wherever the wind and determination will take her. ■

OTIS
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The greats of one-design sailing past
and present know how and where to find
the boatwright of champions.

STORY AND PHOTOGRAPHY BY JOE BERKELEY

WIZARD OF HARWICH

Karl Anderson is working in his shop when he stops to answer what should be a straightforward question: How many boats do you own? After a lengthy pause, the 64-year-old responds, "I don't even know." Yet the answer can be found with a thorough inspection of the grounds outside the door of Karl's Boat Shop in Harwich, Massachusetts. What a passing motorist on Great Western Road might assume is just another Cape Cod nautical junkyard has an eclectic collection of vessels ranging from beautifully maintained racers to unfinished projects. Anderson owns a lot of them—some by choice, a few by trade, but most by chance or unpaid invoices.

When I pay him a visit, and our discussion turns to an obscure design by Ray Hunt, Anderson perks up. "I have one of those in the woods out back," he says. "You can have it if you want it."

This is not an attempt to bribe a reporter into writing a more favorable story, just a fact that it is there for the taking.

One reason Anderson has so many boats in his possession is because he has always had a fondness for things that float (or should float). He learned to sail on the waters of Cape Cod in general and Dennis in particular, first in Turnabouts and then in O'Day Widgeons. His first Rhodes 18 was a boat that had washed up on shore, upside down with the centerboard stuck in it.

In 1973, Anderson begged his mother for the $800 to buy it, and an older sailor advised him on how to restore it. He started sailing with his friends Chris Cooney and Wick Shepherdson. Four years later, Anderson had sorted the boat and made a name for himself in the class. At the helm of his parents' Ford LTD station wagon, a water buffalo of a tow vehicle, Anderson and his crew drove north to Biddeford, Maine, for the Rhodes 18 Nationals. Before the team entered the tunnel in Boston, Anderson looked up and noticed his father, who turns 100 this year, waving from a bridge above. The drive home was a fun one, as the team won the national title.

A love of sailing motivated Anderson to open his boat-repair shop in 1983. The firm's philosophy is summarized in five words: "Have fun working on boats." And work on them he does. But first, he sails on many of them so he can develop a feel for what they need. One case in point is the J/24. Way back, Anderson started out sailing with sailmaker Dan Neri on his J/24 in Newport and then jumped into a boat with Ken Read. Back in the 1980s, brand-new J/24s needed substantial modifications to be optimized, and he was the guy to do it.

Anderson's philosophy of boat preparation is the same today. "My method is the blades first. You make the blades the best," Anderson says. "Secondly, make sure the rig is aligned with the blades, centered side to side. If the rig can't be centered side to side, what's the best compromise? Then the bottom. I might even go rigging, ease of use, then the bottom after that because if you can't tack the boat, it doesn't matter how good the bottom is."

Read, now president of North Sails, is a busy man but eager to make time to talk about his boatwright of choice. He quips, "Is this for an article…or a book?"

They started sailing together in the late 1980s and have a lot of time on the water. Read credits Anderson as a critical factor in what he describes as a division of responsibilities.

"Karl was in charge of the boat from the waterline down. Someone

Karl Anderson at his shop in Harwich, Massachusetts, alongside a Wianno Senior, one of his many projects in motion.

else was in charge of the waterline up. I was in charge of the sails. Moose [McClintock] was in charge of the safety gear."

It was a different era. Professional sailors didn't get paid to sail. They all had jobs, and if they sailed well and won regattas, it boosted their businesses. Anderson worked on boats. Read sold sails, and success on the racecourse was good business. And they still had fun. At the J/24 North Americans in San Francisco, for example, the team could work late into the night to prepare the charter boat. Or they could get most of the work done, knock off early and attend a Grateful Dead show. The vote was unanimous, and Read, Anderson and the rest of the crew saw the Dead in their natural habitat.

After more victories in the J/24 and Etchells than he can recall, Read is quick to credit Anderson. "Karl has a lot of talent and not a lot of ego. I think it comes from a blue-collar mentality. Whenever he introduced himself, he would say, 'Karl Anderson, Karl's Boat Shop, Karl with a K.' He doesn't mind getting dirty. Anybody who knows how to use tools and doesn't mind fairing the damn keel himself is naturally going to have less of an ego. It's work ethic, family, surroundings, what he does for a living. It's never pretty with Karl, but it somehow works. If you said to him that the bottom needs to be perfect, it was perfect, exactly to the tolerances you were looking for. He doesn't do things conventionally, but he always does things right. The guy just wins."

McClintock has sailed with Read and Anderson a fair bit too and says, "Sailing is a sport where you have to earn your respect, and Karl's earned it with everybody."

Part of Anderson's reputation is his demeanor. McClintock says he's never seen Anderson angry. He's also quick to note that he's a great athlete. "He looks like a dumpy guy, but he's not. He's quick, he's agile, he can ski, he can play hockey, and he's one of the best technical crews you'll ever see. I learn from him every time I sail with him. He's really good at making boats go fast."

While Read is a well-known sailor around the globe, he is not the most famous customer of Karl's Boat Shop—not by a long shot. That honor belongs to the late, great Sen. Edward Kennedy. For a decade and a half, the senator entrusted Anderson with the care of his beloved Ray Hunt-designed 50-foot Concordia schooner *Mya*.

Anderson went sailing with Kennedy on numerous occasions. With a grin, he recalls being out on *Mya* for a sail and saying, "Senator, there are rocks over there." To which the senator replied, "I've been sailing these waters for 50 years; there are no rocks there!"

About two minutes later, the boat stopped—abruptly.

See also Back Page
There is nothing half so much worth doing as simply messing about in boats
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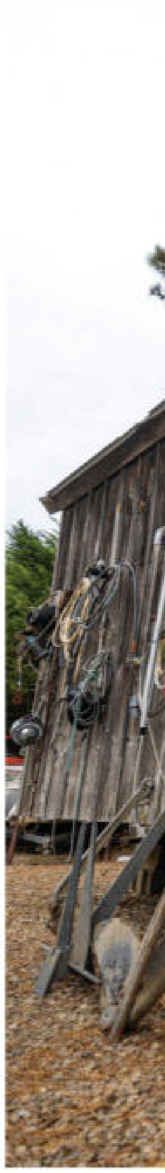
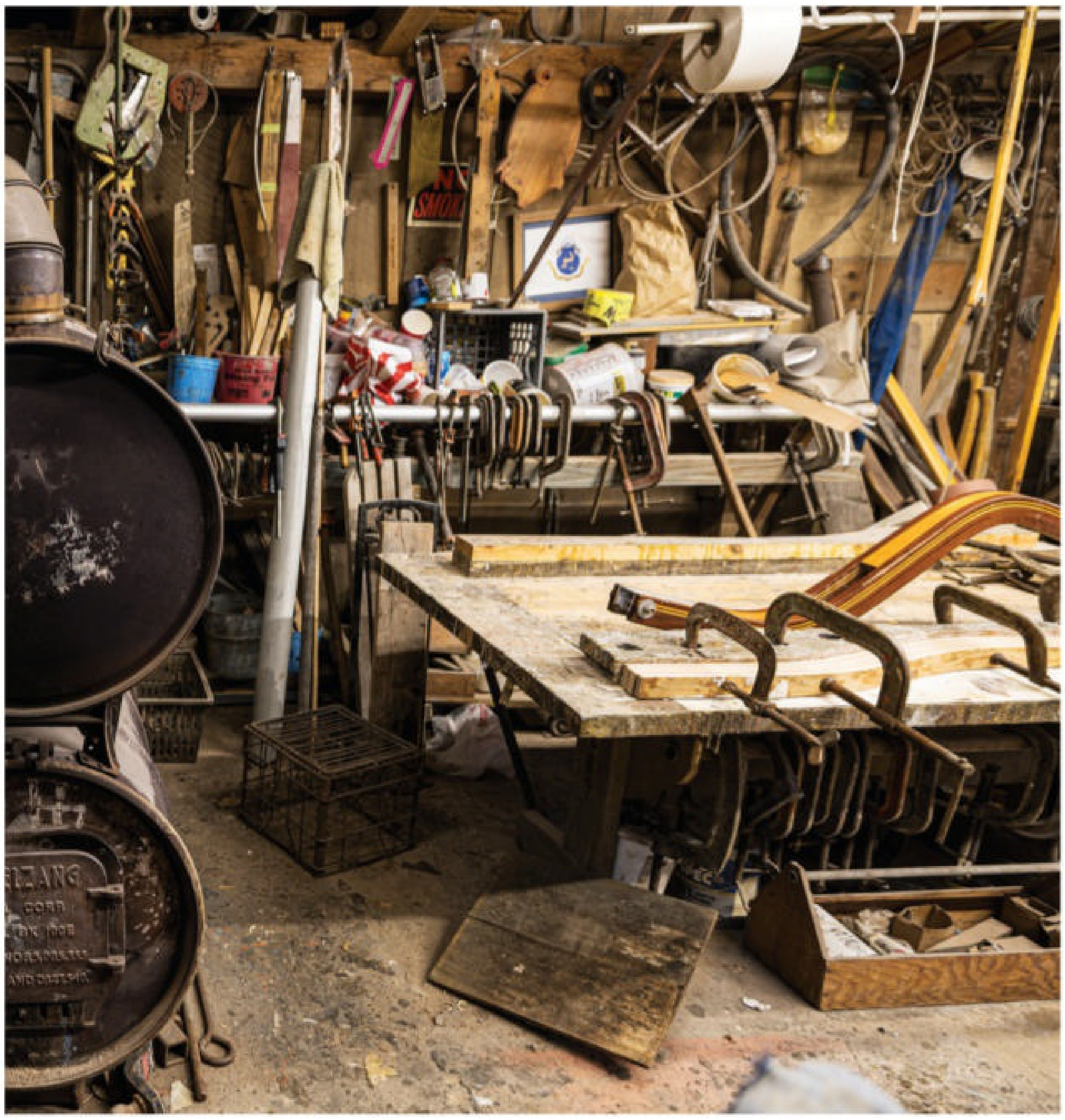
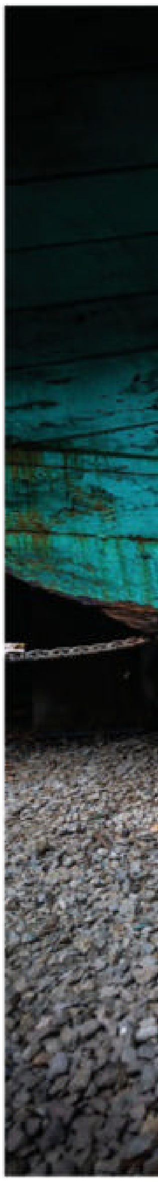


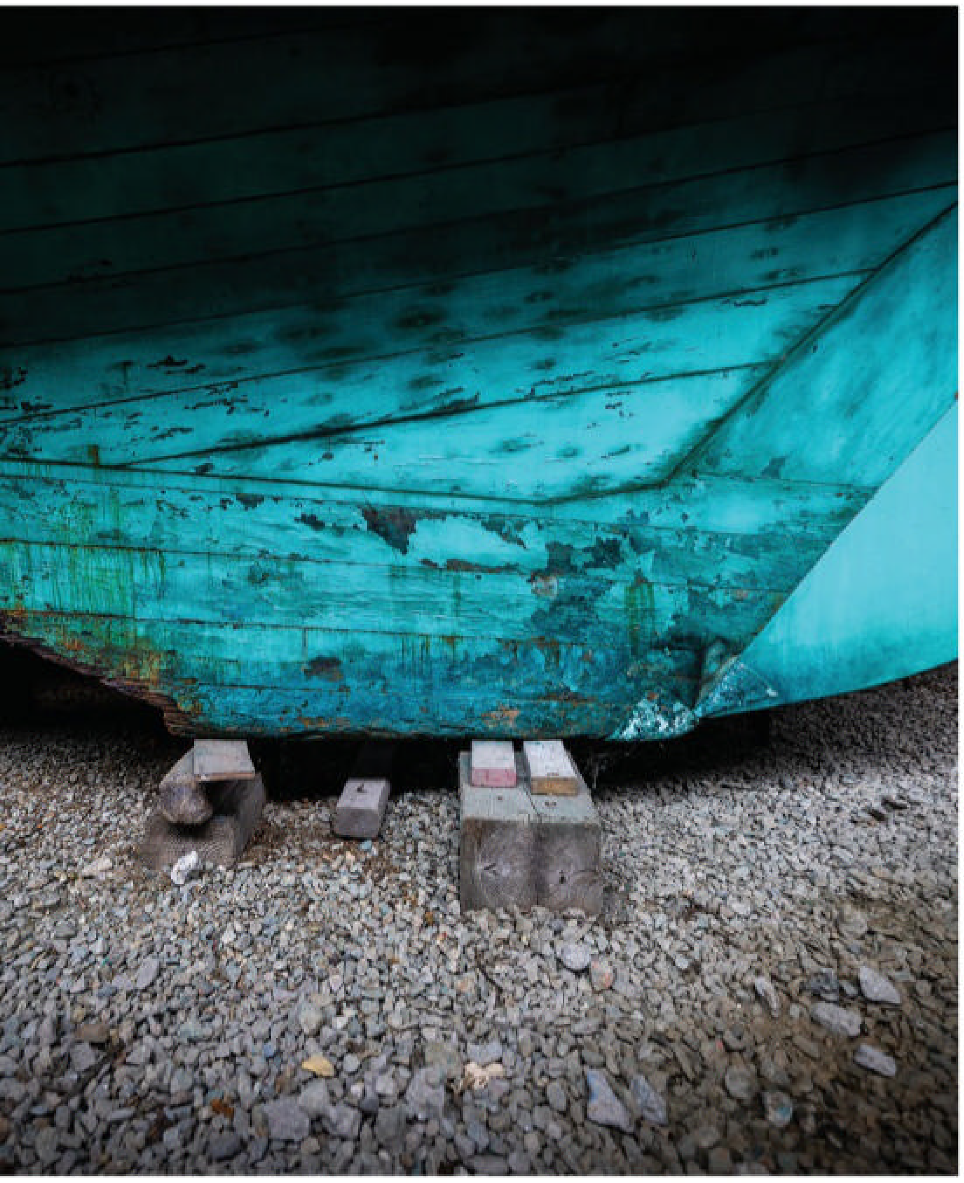
A wander around the outbuildings, barns and back forty of Karl's Boat Shop is like stepping into a





SANTA MARIA

master boatwright's private collection. Another of Anderson's iconic curved tillers takes shape in the shop (below, left).



Anderson and his colleague John Sheehan made news when they lost control of *Mya* during a delivery at the end of the season and put the boat aground in the soft sand of Cold Storage Beach in East Dennis. The famous vessel was later pulled to safety by a tugboat. The damage was minor.

Many sailors on Cape Cod are summer people, so when the crocus and daffodils are popping through the underbrush, so too is the pace at the cluttered boat shop. "We have a very seasonal group that comes here for the summer. They race the local boats, such as the Wianno Seniors," Anderson says. "They come the first week of June, and then they're gone the week after Labor Day. They have a certain amount of time, and they don't want to miss anything, so if something breaks, they want it fixed yesterday."

Few people in the boat-restoration business are fortunate enough to have created an iconic product that is an embodiment of who they are. The Karl's Boat Shop tiller is a thing of beauty, a shape that can be identified from afar. In keeping with the philosophy of the shop, the tiller wasn't a creation based on divine inspiration. It was a sublime answer to a practical problem.

A sailor by the name of Rick Bishop didn't like the feeling of the stock, straight J/24 tiller hitting him in the back of the legs. Anderson thought about it for a bit and created a design with a distinctive bend.

At the time, his shop was laminating ribs for a boat. Anderson gathered up the scraps and fabricated the first of his iconic tillers. "They were made from quarter-inch strips," he says. "We always said it was mahogany, but it's really red cedar. That's how we got them so light. If you don't varnish them, they will go 10 years. Some guys have them for 20 years. Each tiller receives two coats of sealer, three coats of varnish. The varnish of choice is Epifanes."

Two of Anderson's tillers, one for a J/22 and another for a J/24, are mounted on the wall of professional sailor Chris Larson's home because of the wars they have been through and the great memories they recall. After Read moved on to other classes, Larson inherited Anderson and went on to win the J/24 Worlds with him in 1996.

Larson is quick to corroborate Anderson's meticulous boat preparation. "Karl was always the master of figuring out what to do next with boat optimization. Once you got the boat back from him, you were confident that it was sorted. You had to have good boat mechanics, get a good start, and if all of that worked out, you were going to have a good event."

Larson adds that Anderson is the kind of guy who simply gets the job done. "It doesn't matter what you have to do," Larson says. "His wasn't a shop where everything was pretty. It was a get-it-done approach. That's just how Karl operates. He was always one of those larger-than-life guys, always part of the team. Everybody in the boat park knows Karl. He has a personality that everyone likes and respects. He's the good part of sailing, the nostalgic history of the evolution of certain classes. In the J/24, he was in the middle of it all, and it would not have been the same without him."

There's always been a natural order to the chaos of Karl's Boat Shop. It's better to have it and not need it than need it and not have it.

Professional sailors are not the only customers Anderson caters to. Mark Hillman is a highly accomplished Corinthian competitor who has owned a fleet of racing boats, including five J/24s and a J/70. When Anderson was working on his J/24 (No. 196 named *Dr. Feelgood*), he arrived to find there were still some details that needed tending to. "We enjoyed a vacation in Chatham while we waited for the boat to be ready," Hillman says. It was worth the wait; Hillman would later finish third in the J/24 World Championship and win the East Coasts.

A lot of boat shops have come and gone since 1983, but what has kept the doors open at Anderson's place makes complete sense. "Stay away from building boats," Anderson says, looking up from an invoice on his cluttered desk. He has built a few custom boats and restored countless yachts, but he has never been lured into the production boatbuilding business. It's too volatile. Instead, seasonal work, hauling and storage keep the lights on. The race-boat stuff is a passion. Then there are the friends who show up with interesting projects.

Anderson has been in the business long enough that some of the boats he has restored over the years are ready for a second restoration. One he's trying to get back on the water is *Wizard*, an aptly named 40-foot 1959 Concordia yawl designed by Ray Hunt, which is hibernating in a well-loved boat barn toward the back of Anderson's property. If he can convince one or two partners to join him, and find the time between a busy race schedule and running the shop, *Wizard* will set sail again on Cape Cod—someday.

Wizard is a big project, one that will consume a substantial amount of time, talent and money. But with a twinkle in his eyes, Anderson says he's bought plenty of things he couldn't afford over the years, but somehow he found a way to pay for them. Sweat equity is how, and at Karl's Boat Shop, there's plenty of it. The work is dirty. And it's messy. But the result is always fast. ■

CARBON BATTLESTICK

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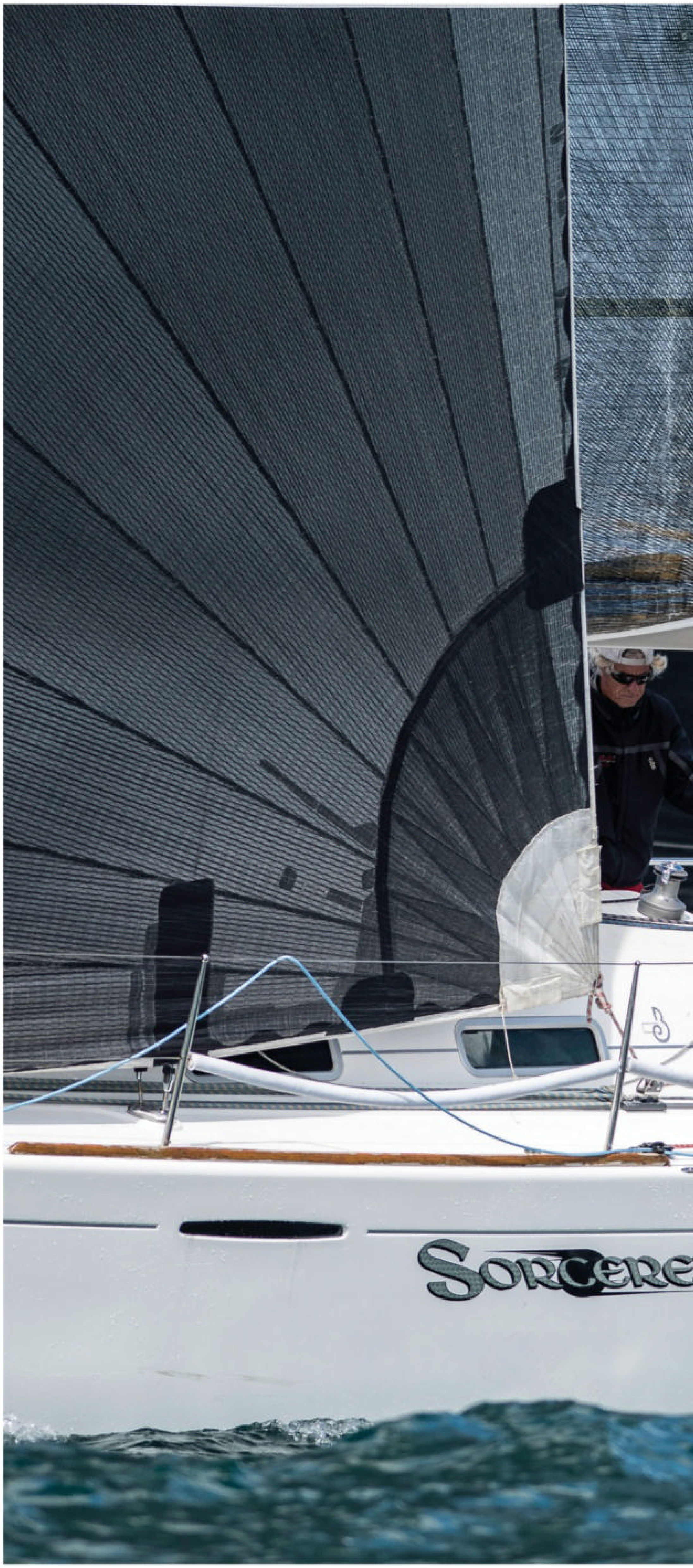

The tactician may not be in the best place to see what's happening up the course and must rely on intel from the rail.
PHOTO: PAUL TODD/ OUTSIDEIMAGES.COM

HOW TO PAINT A PICTURE FOR THE TACTICIAN

Assisting with the tactician's decision-making process means feeding the right information at the right time.

SOME tacticians like continual input, while others prefer a quiet boat, but the majority of tacticians at least like small amounts of accurate and timely information. In other words, provide the input only when appropriate. Before racing, and especially if you're new to a team, always discuss the type of information the tactician wants to hear once, and follow these tips after the race is underway to make your input useful.

SKETCHING OUT THE PRESTART

The tactician will certainly want to know if you spot a last-minute windshift. Indicators are if you notice that you are sailing deeper or higher up or down the line than you were before, or even watching another boat going head to wind or tacking. In a left shift (pin favored) it will take the boat longer to get to the start line. The inverse is also true if there is a right shift or if the boat end is favored. I'll say something like, "Eyes out of the boat; looks like left shift; it will probably take a little longer to get to the line." If possible, I'll add whether it's a small shift or a large shift.

Traffic is also important to communicate. During the last minute of a start, it is often hard to see everything and everyone. I will often report "shark" or "bogie." A bogie is someone coming at us that we will have to deal with. Bogies are usually the biggest threat when there's around two minutes to go and you're sailing down the line on port. Sharks are boats approaching from behind, like a shark getting ready to bite. When you tack to starboard for the final approach, watch for both sharks and bogies.

The third bit of helpful prestart info can come in the last five

FIRST 36.7

seconds. This is where, in all likelihood, the bow person or someone else forward in the boat can let the tactician know if your boat is hidden from the race committee's view. Sometimes this will let you get your nose poked out in a congested area. Be extra confident with this one, and remember your bow is poked forward of your line of sight. The consequences of getting this one wrong are costly. We only make this call if we are quite sure that boats above and below us are poked well forward and exposed.

BRUSHSTROKES AROUND THE COURSE

Immediately after the start, you'll be looking to communicate boat-on-boat relatives. The driver and tactician are looking for comments like, "same speed, higher" or "same height, faster." With these calls, the trimmers and helmsperson know they are in a good mode upwind. If they hear, "same speed, lower" or "slower, same height," they know they need to make a change to keep up with the pack.

Where it gets tricky for the person calling the relative modes is when you say things like "faster, lower" or "slower, higher." In these cases, the commenter must quickly evaluate the VMG and decide if it is a net gain or net loss and make that call. For example, if we are going upwind with a big gap to weather and I say, "Higher, slower, net gain," the driver and trimmers know that it's OK to be a little slower because our high pointing is letting us gain on boats around us. The rule of thumb is always talk about your boat when communicating relative speeds and angles. It's best this information comes from someone in the proximity of the trimmer and tactician so the conversation can be quiet and not too distracting for the rest of the crew.

As we sail upwind, I like to let the tactician know where he is in relation to the laylines. This helps avoid getting too close to a layline from too far away. Many tacticians avoid the laylines early because once you arrive at a layline, your tactical options are limited. This communication also reminds the tactician to start looking at laylines when you're closer to the mark. I refer to the laylines in percentages with whatever layline we're headed at stated first. If we are directly downwind of the weather mark, I will say, "50-50 on the course." This means that there is equal time to spend on port and starboard before arriving at the weather mark. As we continue up the course on starboard, I'll look upwind and perhaps say, "30-70." The tactician will then know that he or she has 30 percent to go to the port layline or 70 percent to the starboard layline. Many tacticians will tack before getting within 10 percent to a layline when they are still far from the weather mark to take advantage of a windshift or leave room to tack back out if you get tacked on.

Calling puffs and lulls helps the tactician decide where to tack, but more importantly, it helps the trimmers and drivers. The trimmers can anticipate and adjust power in the sails, and the driver can pinch or foot slightly to keep the boat tracking properly at maximum VMG. "Short-lived puff in 3…2…1…" lets the driver and trimmers know that only a small change will be needed keep the heel angle the same and the boat sailing along properly. If they hear "more pressure consistently in 3…2…1…," they will know that a more long-term setup will be required to keep the boat sailing optimally.

Calling chop and flat spots will help the tactician decide on where to tack as well, but equally important, the calls will help the helmsperson drive the boat. In a choppy section, you often need to foot, and you can really point in flat spots because there is less chop or waves to slow you down. We'll use verbiage such as "chop in one boatlength," or "chop continues" or "flat water for a bit."

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Lastly, in some areas, calling weed or kelp in the water is important. This can be a little complicated. I like when people keep these communications simple. "Up one, up five, down one, down five" are four of the only six calls I like when I'm driving. If I hear "one," I know to turn a little; if I hear "five," I know to turn a lot. I also like to know "clear," meaning I can go back to driving normally. It can be important to know what mode you are in and where boats are around you. If there is a boat close to leeward, saying "down one" is probably bad when you could have said "up one." Also, pay attention to boatspeed. Rarely should you say "up five" when the boatspeed is already low. The final two calls are "no lower" or "no higher." This simply lets the driver know that he can stay on course as long as he doesn't turn toward the debris.

As with upwind, calling puffs on the downwind leg is important. When soaking, the helmsperson and spinnaker trimmer can work together to make some gains. For example, if they know that a puff is coming, they can soak deep a little longer. Normally, after soaking deep, you have to head up to build speed. But if you know a puff is coming quickly, you can stay deep and let the puff help you accelerate rather than heading up and burning distance.

The tactician will likely want to know whether they are in clear air or not. This also helps the spinnaker trimmer. I will often call how many boatlengths of clean air we have. For example, I will say something like, "We have three lengths of clear air," meaning there is bad air from a competitor three lengths behind us. Then later, if I say we have two lengths of clean air, everybody knows that we need to speed up or sail slightly higher to avoid bad air. Then if I say, "One boatlength of clear air," the crew knows we are in danger of being rolled.

> **The rule of thumb is always talk about your boat when communicating relative speeds and angles.**

Again, like upwind sailing, it helps to communicate relatives between boats. In some boats, such as the Etchells, the bow person can look behind and make these calls, almost becoming the boat-on-boat tactician themselves. If the trimmer, who is ideally talking to the driver about angles, hears "lower, slower, net gain," they know their mode of sailing slower but lower is gaining on the competition and they can continue sailing in that mode. However, if they hear "lower, slower, net loss," they know they need to change modes to achieve a better VMG. The tactician may be interested to hear "lower, slower, net even." This means that you are simply sailing a different mode, but you are not gaining or losing overall. In this case, the tactician can decide how they want to sail for future positioning. The tactician may want to sail low and slow across someone's bow so that after a jibe, they are again in clear air.

Last but not least, as you come into a leeward gate or finish line, the tactician can benefit from input on which end or mark is favored. Remember, it is OK not to have all the answers. However, even that should be communicated. Don't be afraid to say, "I don't know." It's better than giving false information. ■

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BY MIKE INGHAM

USING CRITICAL DECISION POINTS

There are definable points in a race when it's good to momentarily shift your focus from boatspeed to strategy.

I used to lose regattas because of one very bad race. When Mother Nature pitched straight, I did great, but when she pitched a curveball, I whiffed. I needed a way to see the curveball coming, a reliable way to recognize those inevitable times when my plan goes wrong. "Critical decision points" is the process I now use to check strategy on the fly.

To illustrate, let's relive a painful example of when I whiffed. I recall vividly a day that my strategy was to go hard left to hook into a geographic lefty. The first race went according to plan; I got a good start near the pin, held my lane to the left corner, got the nice header and tacked. I crossed the fleet riding that lefty to the mark—strategy verified.

The second race, I confidently led the way to the left corner again, but instead of the lefty in the corner, I found myself in an unexpected righty. I had been so focused on speed and executing my "go left" plan that I never looked over my shoulder to the right side. It was too late; I missed the persistent right shift. The fleet was launched. With my tail between my legs, I took that long port-tack header to the mark.

Sure, I can always get better at strategy; I am not going to give up that lifelong study. But occasionally, Mother Nature is going to do whatever she is going to do. In this case, even in retrospect, I can think of no way to have predicted that 15-degree righty in that exact 10-minute slice of time. It was not forecast, and there were no natural indicators like clouds or a visible wind line.

Let's replay that ill-fated second race, but this time insert the 20 percent critical decision point (CDP) to show how it works. This time, at around two minutes in, I shift from my boatspeed focus to look over my shoulder to scan the right side of the course. The boats look surprisingly good over there, so I investigate further. I decide there is an unexpected persistent right shift forming, so I tack to port, and cross the course in foot mode and rip to the right. Mitigation is the goal, and with that, I know I am not going to win this race. After the finish, I look back at those who carried all the way to the left, and they are hopelessly behind. That was me last time. My finish is good enough to stay in the regatta's overall hunt. It was not easy taking all those sterns, but it's far better than the alternative.

I think the first-beat 20 percent CDP is the most important because the fleet is still so tight and so much positioning is established early in the first leg. But the 20 percent works

Off the start, focus on boatspeed. Then, after sailing about 20 percent of the leg, take stock of your strategy. PHOTO: PAUL TODD/OUTSIDEIMAGES.COM

THE BEST ADVENTURES HAPPEN ON THE WATER

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well on every leg, both upwind and downwind.

Let's say we're sailing a 10-minute beat, and thus the 20 percent CDP is at two minutes. Two minutes into a typical race, the dust has settled, and I am in my lane executing my strategy. It's a good time to pause and look around. Earlier, say one minute into the race, I'm likely still fighting for my lane, and besides, there is too little separation for the boats on the other side to establish themselves enough for me to see any change yet. Longer does not work either. By three minutes, I am more than halfway to the layline, and if my strategy is wrong, it's just too late for any meaningful recovery.

There are other critical decision points worth discussing. The first is before the race even starts. At the warning signal, I stand up and scan the edges of the course, look at the sky, and look for any other indicator that Mother Nature may have changed something unexpectedly. This is my last sanity check before getting into my start routine.

After the first 20 percent CDP, the next one is 80 percent of the way up the upwind leg. It is the last moment I can realistically change my mind about my strategy for the downwind leg. In our example, the question I ask at 80 percent is, "Do I still want a straight set, or do I want to change to a jibe set?" In the first race, the answer is I want to straight set and take the header lefty first. In the second race, I could change my mind and jibe set to hook into the new righty header. At 90 percent, it's too late. I am approaching the windward mark, and I have a lot to think about as I weave through traffic.

Similarly, 80 percent down the run is the last moment to look upwind and decide which way I want to go on the next beat. "Do I want to round the gate to my right and go left, or switch to my left gate to go right?" In the first race, I want to go left again, so I will stick with my original plan of rounding the gate to my right so I can head left again. In the second race, I may want to modify my original plan to go right if I think there will be an even more persistent righty coming. If I do choose to swap sides to get to the other gate, 80 percent is the last chance to cross the course to get there. The 80 percent CDP works on all legs, up and down, except the last leg, where there is no next leg to plan for.

> **I don't set an alarm for the CDP times. Instead, I have a feel for the scale of the race and the urgency in which I will need to lift my head out of the boat.**

The 20 percent and 80 percent CDPs work for a wide range of course lengths. If I were at a world championship, I expect the course to be much longer than our previous example, say 20 minutes to accommodate a large fleet. With all those boats, it will take a long time—around four minutes—for the dust to settle off the starting line and the fleet to separate enough to reassess. That seems like a long time, but the course is crowded, and I am still six minutes away from the layline, so I have plenty of time to change my plan. Unless I am already in the lead, I will have to start planning for the run well before I enter the fray as I approach the windward mark, so 80 percent at 16 minutes works perfectly.

On a short five-minute course, things happen fast, so I better be taking a quick look to the other side at about one minute or else I will quickly find

IF IT CAN
SLIDE BETTER,
ROLL BETTER
OR FLY BETTER...
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myself in the corner with no options. It's less practical on a course this short to implement the 20 percent CDP, but I often do anyway as practice for longer courses, helping ingrain it as a habit. On a five-minute beat, the run might be just a few minutes, so the first move out of the mark is likely the only move I will get. The 80 percent CDP helps make sure I get that move right.

I don't set an alarm for the CDP times. Instead, I have a feel for the scale of the race and the urgency in which I will need to lift my head out of the boat. In a short race, it's soon after the start, whether I have had time to settle or not. On a medium-length course, it's enough time to fight for a lane. On a world championship course, I better put my head down for a long time and go fast before I dare take my focus off speed. That is the only way to get and stay in the front row.

The CDP reassessment works especially well with strategies where I want to go to a side because the separations from one side to the other can be so big. Side strategies include a geographic effect, current, persistent shift or more pressure. But it also works with middle-of-the-course strategies. For example, if my plan is to play shifts up the middle, I might tack as soon as I have a lane to port to get in phase with the first lefty. If I am still on that lefty at my 20 percent CDP, and I look around and see nothing out of the ordinary, I get to work going fast and reading my compass. But if everyone on my left is lifted even more than I am, I must decide if it really is not oscillating and instead is a persistent lefty. I still have time to abandon my tack-up-the-middle strategy and head to the left corner if it is.

Even though these critical decision points are universal for any condition on any leg, I still need to be "heads-up" if I want to be the first to detect change. "Highest number of the day," "clouds rolling in from the left," and "it sure seems way lighter now" are all examples of indicators of change. I for sure want to reassess at 20 percent and 80 percent on every course leg. But in between, if I sense any sign of change, I take the time to find out what it is and if I should do something about it.

CDPs are a tactician's role. They are particularly helpful if you sail shorthanded. For example, when racing Sunfish, I find CDPs invaluable. I still find them valuable when I sail double- or triplehanded because although one person is assigned as tactician, they are usually busy also trimming the jib and spinnaker. With four or more teammates, I get a dedicated tactician, and if the boat is big enough, perhaps a navigator/strategist. The more dedicated the role, the less important CDPs are. But like a frog in boiling water won't jump out when heated slowly, a new situation can sneak up on even the most observant tactician. The CDPs assign them set moments to reassess.

Critical decision points work because speed makes you look smart. To get the most out of your boat's speed potential, you need to focus on all the details of trim, controls, balance and steering. That leaves no bandwidth to look around without sacrificing some speed. It is a conundrum because you may well lose speed at the wrong moment because you are trying to look around, but that may in turn lead to a tactical disadvantage as you lose your lane or can no longer tack and cross. CDPs give you a process of scheduling those lapses of speed to make sure your strategy is on track. That way, you can choose moments when the consequences are not so bad if you go a little slower. They limit how long and how often you pause so you are up to full speed longer. Perhaps best of all, they free your mind to focus on that speed, knowing that you have a process in place to keep track of the big picture. Have a sound strategy, get a good start, sail fast, and use the critical decision points to be the first to recognize change. That's a winning combination. ■

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A WINNING COMBINATION

Club-level team racing doesn't get the attention it deserves, but this New England yacht club has proven how it can engage existing members while attracting new and younger sailors.

FOR Doug Sabin, one approach to getting more of his yacht-club peers active and on the water was simple: adult team racing. Sailing's energetic and all-encompassing discipline, Sabin knew, would appeal to younger members at Marblehead's Corinthian YC, and he was right. Corinthian's success in building a team-racing program and engaging its membership in a new and exciting way is a great example for any club or organization looking to jump-start its stagnant sailing program.

Team racing is a strategic battle where boat position, clever tactics, precise boathandling, tactical skill and teamwork are the ingredients for success. The top teams practice maneuvers to gain an advantage. When one team is winning, it is on defense, and when a team is losing, they are on offense. Like other sports, including basketball and hockey, there are man-to-man matchups and zone defenses. It is a fast-moving game as positions change. Sailors must be quick at math as the scores change. The most popular format is three boats versus three matches. Watch a competitive intercollegiate team race and you will see teams attacking and trading the lead during fast-paced maneuvers at turning marks. Often there will be a lot of noise during these moments, although the best teams are remarkably quiet as they execute their plays. Champion teams are fluid and make it look like ballet.

It's no surprise to me that participation in team racing has grown dramatically over the past 20 years in several yacht clubs—domestically and abroad. Clubs that have invested in building and growing their programs have seen membership rosters grow as a direct result. Sabin, who sailed at MIT, says the stakeholders at Corinthian recognized that providing boats for sailing is one viable way to attract young members.

When they initiated the team-racing program, they borrowed boats, but as the local one-design Sonar fleet faded, the three yacht clubs on

Marblehead's Corinthian YC invested in a team racing program to engage young adult members, and it has proven to be an asset for the entire club. PHOTO: STUART WEMPLE/NYYC

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Marblehead Harbor (Corinthian, Eastern and Boston) purchased a dozen used Sonars, which allowed them to have two sets of boats for team racing.

"For most of my career, Eastern and Boston were the strongest sailing clubs in the harbor," Sabin says. "Thanks to team racing, Corinthian is now a very strong sailing club."

If there's any doubt to Sabin's assessment of Corinthian's competitive standing today, consider that he, along with younger members Wade Waddell, Miranda Bakus and Duncan Swain, won the New York YC Resolute Cup last September. That win qualified Corinthian for the Rolex NYYC Invitational Cup in the fall of 2023, the club's marquee international amateur keelboat championship.

The fast tempo of team racing and the boathandling skills required to excel have helped Corinthian's team racers to become sharp fleet racers too.

PHOTO: STUART WEMPLE/NYYC

While the Resolute Cup was a fleet-racing competition, Sabin says their triumph over many of the United States' premier yacht-club teams was in a large part due to their team-racing focus. "None of us had sailed in the Resolute [Cup] before. The reason we were successful is that we have this tight definition of what keelboat sailing is at Corinthian. So, we could fall into our roles and work together as a team very quickly. We practiced in an RS21 against Eastern YC for about two weeks before the regatta. We all knew how to communicate, and we knew our roles because of team racing."

For Corinthian to get its team race program up and running at full speed, it tapped two-time Olympian Tim Wadlow. "For us, it was connecting with the college sailors. It's all about youth and bringing those people into the club. Tim is a team-racing world champion, and with people of that level, we got into organized practices. He encouraged us to use spinnakers, which really changes the game quite a bit. The game really begins at the windward mark with the spinnaker because you are so much more powerful downwind. Tim understood that and made it part of our practice."

For a yacht club to acquire a fleet of boats requires a big investment, but the use of small and stable keelboats allows for a wider range of ages to get in on the action. Sabin says they're hoping to purchase a new fleet of Sonars that would be owned by all three yacht clubs within the next year. "Both New York YC and Seawanhaka Corinthian YC (in New York) have fleets," Sabin says. "We are following their model."

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The Annapolis YC has ordered a fleet of 14 new Sonars with the goal of upgrading members’ team-racing skills and attracting new members. Past commodore Jonathan Bartlett, who initiated the program, says: “The biggest reason we ordered the boats was to go play in the team-racing arena. We have to learn to sail the boats and how they race. Where is the best team racing? It’s in New England.”

Sonars, designed by Bruce Kirby and first built in 1980, are now being built in England, where the only set of molds still exists. Bartlett credits Annapolis YC’s incoming rear commodore, Ted Kaczmarski, for selecting the Sonar and convincing the club’s board to provide the funding, saying, “It is a good investment.”

Creating a fleet of yacht-club-owned boats is a big operational and financial undertaking. As with all boats, there are considerations and budgeting for storage requirements, routine maintenance, insurance costs, and equitable scheduling of the use of the fleet among members. There is a long list of possible applications for a fleet of boats in addition to team racing, which could include adult-program sailing instruction, recreational daysailing, clinics, weeknight races and invitational regattas. Some clubs maintain two sets of sails for their fleet, one for recreation and instruction, and another reserved for racing. Including the club’s burgee on the sails and naming the boats after club luminaries, donors or famous yachts add to the spirit. Also, it’s important that a fleet be maintained equally so the boats sail at the same speed.

Another important consideration is to make sure the boats can launch easily. Minimal time preparing for sailing or putting boats away is an attractive factor. An organization looking to purchase a fleet for the first time might consider an existing fleet of used boats. A few sources of funding might include a grant from a club, a group of members creating a syndicate to purchase individual boats, donations, charter fees (try to keep fees at a modest level) or foundation grants. The class of boat selected is an important factor. The selection criteria centers around the cost, storage, typical sailing venue and number of crew. It must, of course, be a suitable boat for the prevailing wind conditions.

Team racing is practiced by people of all ages—the Hinman Masters and Hinman Grandmasters regattas are popular events—and the engagement goes beyond younger sailors. Corinthian’s program, Sabin says, has boosted participation among female members, which resulted in the creation of the Thayer Cup, its first women’s team-racing regatta using spinnakers.

A team race event typically engages many other supporting roles as well, from race officials to umpires and volunteers. “We always use umpires for our planned events,” Sabin says. “We don’t use umpires for practices or for pickup team racing on Thursday nights.”

Umpires, he adds, typically take the time to discuss on-the-water calls with competitors after racing, which makes it a learning experience for everyone. They want to make accurate rulings and learn from the sailors’ input. It is a two-way street, and I would add that damage deposits at regattas are an effective deterrent to collisions.

My first article in this magazine appeared in the spring of 1974, and at the time, I advocated for team racing to be included in the Olympic Games. Now, 49 years later, I still believe sailing at the Olympics could use freshening up. The Games hosts 10 classes, and team racing would be a welcome addition and generate top international competition with exciting, fast-paced, athletic sailing on a small course that’s certainly broadcast-friendly.

Perhaps it’s time we have that conversation again. ■

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ONE JUMBO-SIZE LEGLER-ACY

College sailing will soon bid happy retirement to one of its longest-serving coaches.

BY KIMBALL LIVINGSTON

FORTY-FIVE years into college sailing as a head coach, Ken Legler is clear: You can coach starting technique, but only experience can teach it. And nobody wins much without it. And I'm clear that nobody argues much with Ken Legler. So, if you feel a trembling in the power of the Force toward the end of this spring semester, you will know that Legler really has followed through and hung up his coaching tools after dishing out experience to generations of Tufts University Jumbos.

Forty-five years, including 43 at Tufts and even more before he became head coach? Heck, he was already coaching when he was still in school. The rest was as natural as learning to smell a windshift. As a coach, Legler's results speak for themselves. But we can come back to that because if championships were all the man had to show for himself, retirement would not be an earthquake moment. It is one because Legler has inhabited the sailing world, pumped it through his veins and made a difference. He was almost apologetic in 2006 when a second round of throat cancer sidelined him for chemo and radiation. What came to mind as he reported from a hospital bed was: "I sailed through mono as an undergrad. I would be fired if I advised my students to do that now. I just can't get enough of this college sailing thing."

Cancer and chemo were too much for "sailing through," and there was also a stroke. As Legler laboriously recovered from each and returned to coaching, the outpourings from friends, admirers and students will perhaps have prepared him for the outpouring (with a capital "O") coming his way May 12-13, when a tribute is the keynote of Tufts' annual Alumni Regatta. Or maybe not. When the stories start rolling…

Josh Adams, a three-time All-American and later director of US Olympic Sailing, says: "When they do a Mount Rushmore for college sailors, Ken Legler will be there. As a coach, he's more philosopher than technician. What he's good at is getting sailors on the water to learn from being on the water. When you graduate Tufts and look back, you realize that all those practice days and all those practice races were led by an exceptional PRO. He's made a difference in race management in America. When Key West was at its peak, Ken's circle was always lauded.

"Ken is multidimensional. He's a historian, and he's a storyteller—he made sure we understood our heritage. And he's a great photographer who documented all his sailors through the years. Meanwhile, Jumbos showed up in college rankings alongside a lot of Division 1 Ivy League schools. Ken did that with a small Division 3 school, and you can't look at his accomplishments without feeling like this really is the end of an era."

OK, a sampling: In 1978 to 1980 at the US Merchant Marine Academy, Legler coached two national championship teams and four All-Americans. At Tufts he is credited with 20 national championships and 92 All-Americans. He was an All-American himself at the University of Rhode Island (while he was doing his first coaching, remember).

At the tribute, they really should play "My Way." The home waters for Tufts is Mystic Lake, where the breeze is as shifty as you would expect in a landlocked Boston

Ken Legler's impact on campus courses is profound, but his contributions to the sport extend to race management as well.

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suburb. The fleet is the Lark, featuring a bendy rig, square-top main and a wide planing transom. That is, Larks are the antithesis of the institutional Flying Juniors and C420s used in the rest of college sailing—tweakier, livelier, more entertaining. And they're improved, generation by generation, and perhaps a tad frustrating to other teams when they have to show up and adapt. Legler makes sure that his people are challenged by a variety of other boats too, perhaps 16 per semester, and he regrets the time when kids just goofed around in boats. There was freedom in the absence of organization, and there were lessons.

Tufts sailors do not receive the coddling their talents might earn them elsewhere. Legler knows the programs where, as he says: "Sailors don't have to work on the boats. They just show up and start roll tacking. There's no cooking or cleaning, and those things take time, as anyone no longer in college soon discovers." In an appreciation at sail1design.com, Pearson Potts recalls a sailor who asked about accommodations at the next regatta and received the reply: "What am I, a friggin' travel agent? You're an adult now. Figure it out."

Coddled or not, the Jumbo sailing experience includes ample TLC. Current Jumbo Celia Byrne recalls: "After I first visited Tufts, I got a funny text from Ken that made me wonder if it was meant for me, something about a female astronaut. When I went back, I realized it was because he had researched my interests—and read my whole file—and thought I would find it worthwhile. That doesn't happen everywhere. And that photography he's known for—he continued through COVID and sent pictures to my family. They were touched at a time when it mattered."

"Ken was successful because he is meticulous," says another grad, Stu Johnstone. "The difficult thing at first was a lack of resource. That came later, then really took off when Larry Bacow became president of Tufts and wanted to see the sailing team grow."

> **Ken Legler has inhabited the sailing world, pumped it through his veins and made a difference.**

Today the three-story Bacow Sailing Pavilion provides boat storage and a repair shop, home and visiting team rooms, a kitchen, a conference room, a coach's office, a great room for regatta gatherings and an ever-popular observation deck. Small program or growing, Legler maintained the largest roster he could, which today means 50-plus. Every weekend he sends out a fleet of vans to regattas big and small. It's important to him that all his people, Nationals starters or not, get the full college sailing experience. When spring break rolls around, tradition calls for camping out at St. Mary's, and a week of sailing institutional boats to get ready for Nationals. Legends are born in those weeks.

So, what is it like to be Ken Legler?

"Recruiting is a massive piece of the puzzle," he says. "Letters flood in, especially on Sundays, maybe 150 contacts a year. The first thing I look for is whether the kid is qualified to get into Tufts. Then I think about sailing ability. I can tell in a hurry if someone can sail. What I can't do is take more than one or two male crews in any class year. Six on the team is plenty, but I could take 20 women, because it's only the small skippers who can sail with most male crew.

"Because of Title 9, we have to take more women to balance out the football team," Legler says. "As long as we have more women than men, we're OK, but the school would like it if we had way more women or just fewer men. When Brown went varsity, they cut a deal to have only 10 men for 20 women, with everyone else sailing on the club team. So, yes, we're looking for women, but they have to be able to get in. Remember, we don't pick them, Admissions does."

And how might Legler see the relationship between college sailing and Olympic sailing? That's a perpetual topic, heated up recently by Paul Cayard as head of Olympic Sailing.

"To excel in college sailing," Legler says, "you have to maintain a keen focus on academics and a keen focus on the finer points of college sailing at the same time. It's consuming. Nevertheless, our people are at the

Ken Legler is a lifelong and champion sailor, excelling in college sailing, one-design and team racing. He is also a top-shelf PRO, coach, photographer, and mentor to many.

PHOTOS: COURTESY KEN LEGLER

top, academically, and it's amazing what a high level of tactics and boathandling college sailors achieve—but that does not get them any closer to a medal. For a medal, you have to sail Olympic-class boats, and not many people can afford that, either the money or the time. To be a fall and spring All-American and an Olympic campaigner is almost impossible.

"Olympic boats have changed dramatically, except for ILCAs. College boats have remained the same, and I don't see any big changes coming. Another thing too: Our colleges produce people who make six figures right out of the gate. That's after working hard through high school and then working like bandits to get through college. They're not going to give that up to finish second at the Olympic Trials."

So, how did Ken Legler become Ken Legler? Not by following the path of his students.

"I wanted to go to Tufts," he says, "but my dad told me I'd have to make up the cost difference between Tufts and URI. That meant I'd be working all the time instead of sailing, so I went to URI and sailed every day. I was not a good student, but I was a good sailor. I took over as coach as an undergraduate, and I was running the team or trying to. When I came out, I was more prepared for coaching than anything else."

That led to a first job at the Naval Academy, and soon to that head coaching position at Kings Point, and the success levels and impact of the total career we are celebrating here.

Personal challenges weighed in. Legler returned to his coaching job—it's a mission, let's be real—after each cancer recovery, and recovery was never guaranteed. Today he says: "I'm down to the same weight as in college, but not with the same metabolism. I eat so slowly that I spend five hours a day eating."

That was simple sharing, not a sympathy play, and the conversation that produced this writing quickly turned to starting and speed as the first two elements of racing success. Here's Legler: "We run lots of practice starts and acceleration drills. Lots. That's how you learn to pay attention and really see what's going on. Do you notice a header hitting that boat at the other end of the line? Are you ready to react before it gets to you? A coach can talk about those things, but internalizing them, making them instinctive, is all experience. This year was my third winter back frostbiting on Boston Harbor. We sail Rhodes 19s, and those boats are slow to accelerate. It's not as though I don't have experience, but I've had setbacks. It took a while for my starting chops to kick in. I had to learn to listen to my coaching voice." ■

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0.0	0.0	1.2	0.6	0.5	0.8	1.0	1.1	1.1	1.2	1.3	1.3
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Draft up/dn	5"/4' 11"
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Disp.	85w0 lb

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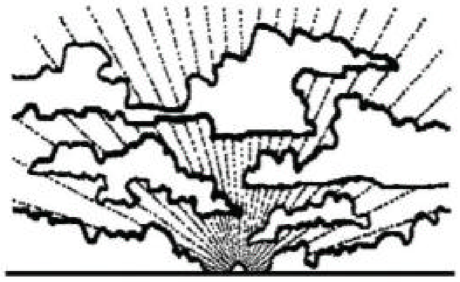

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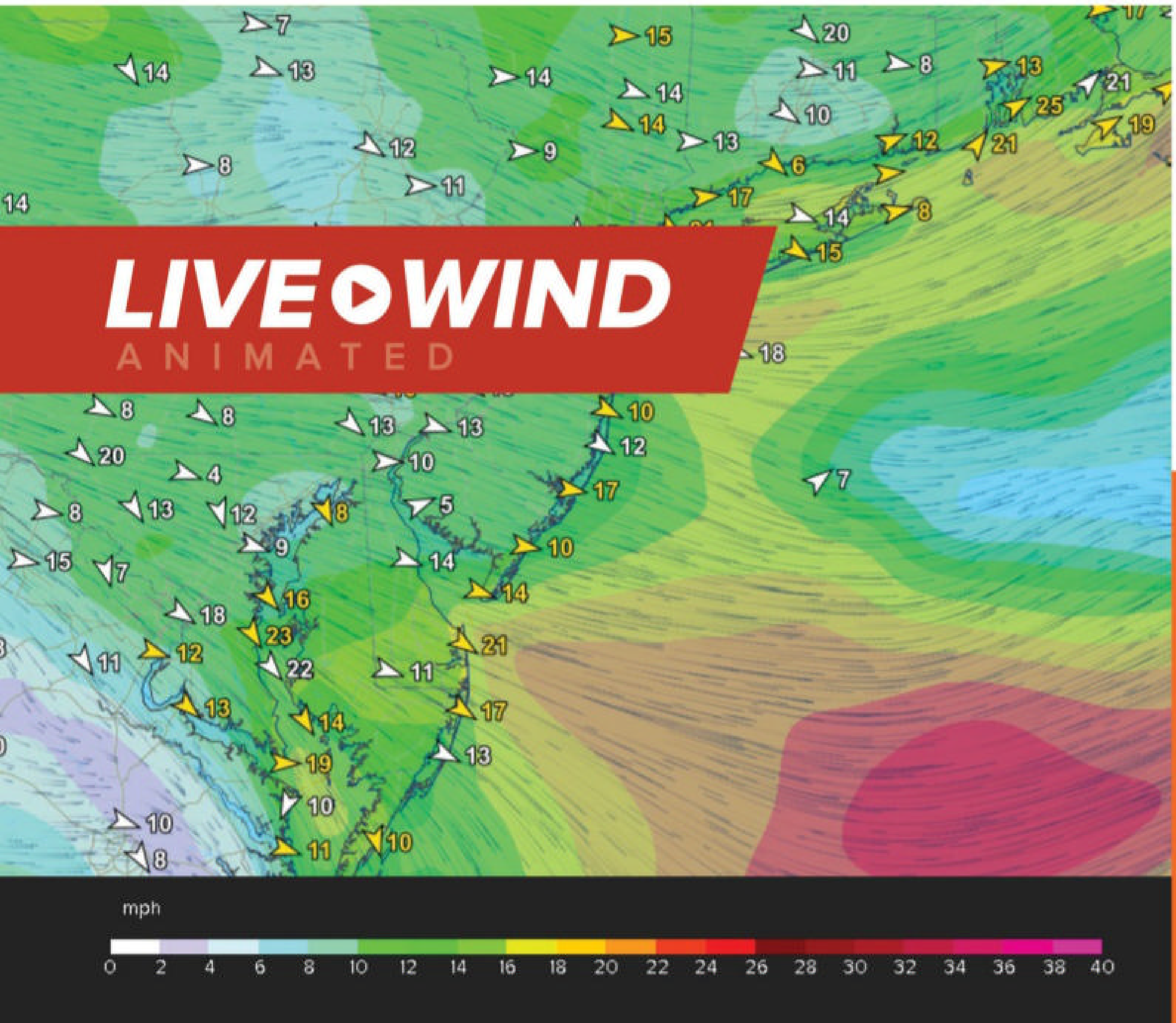
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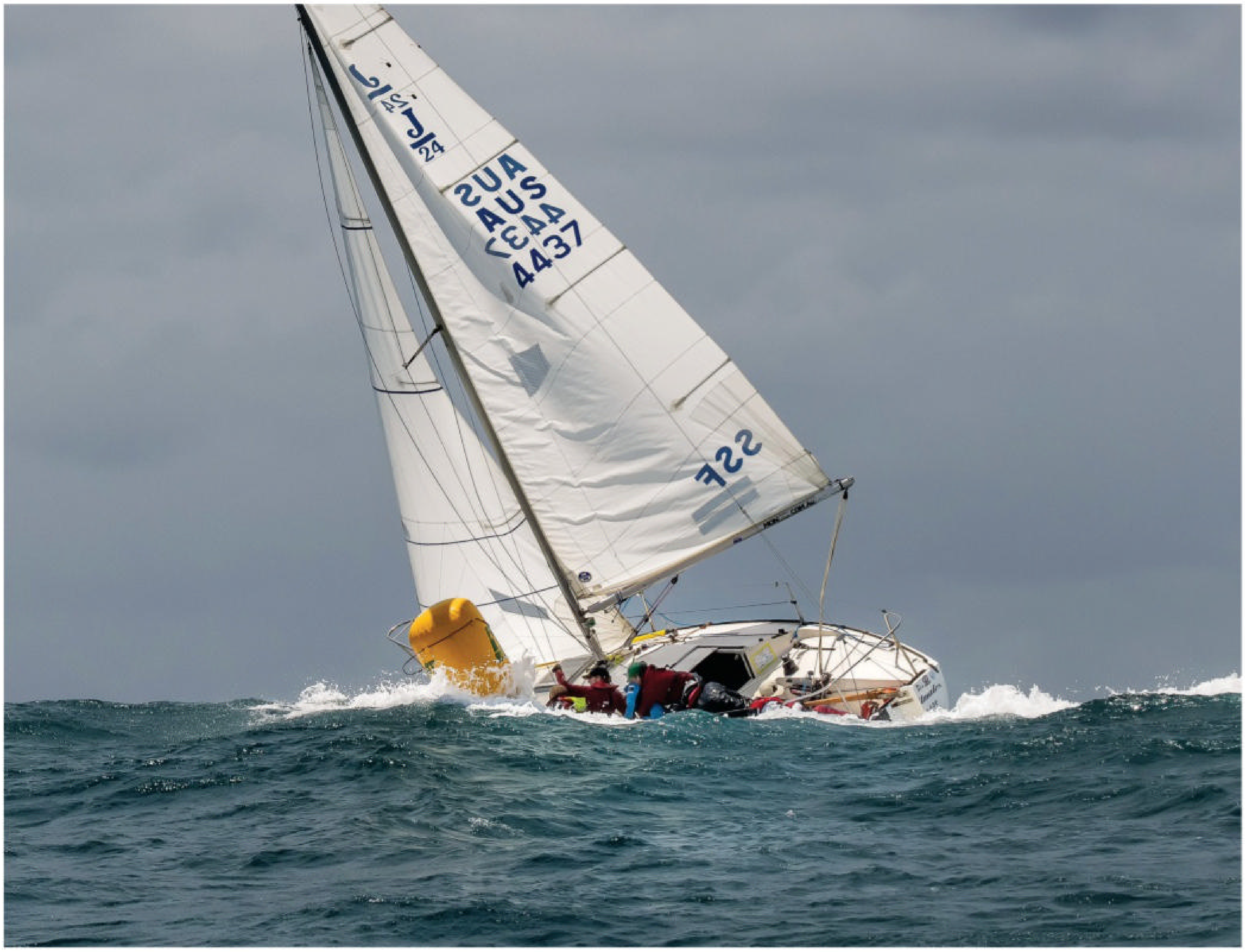

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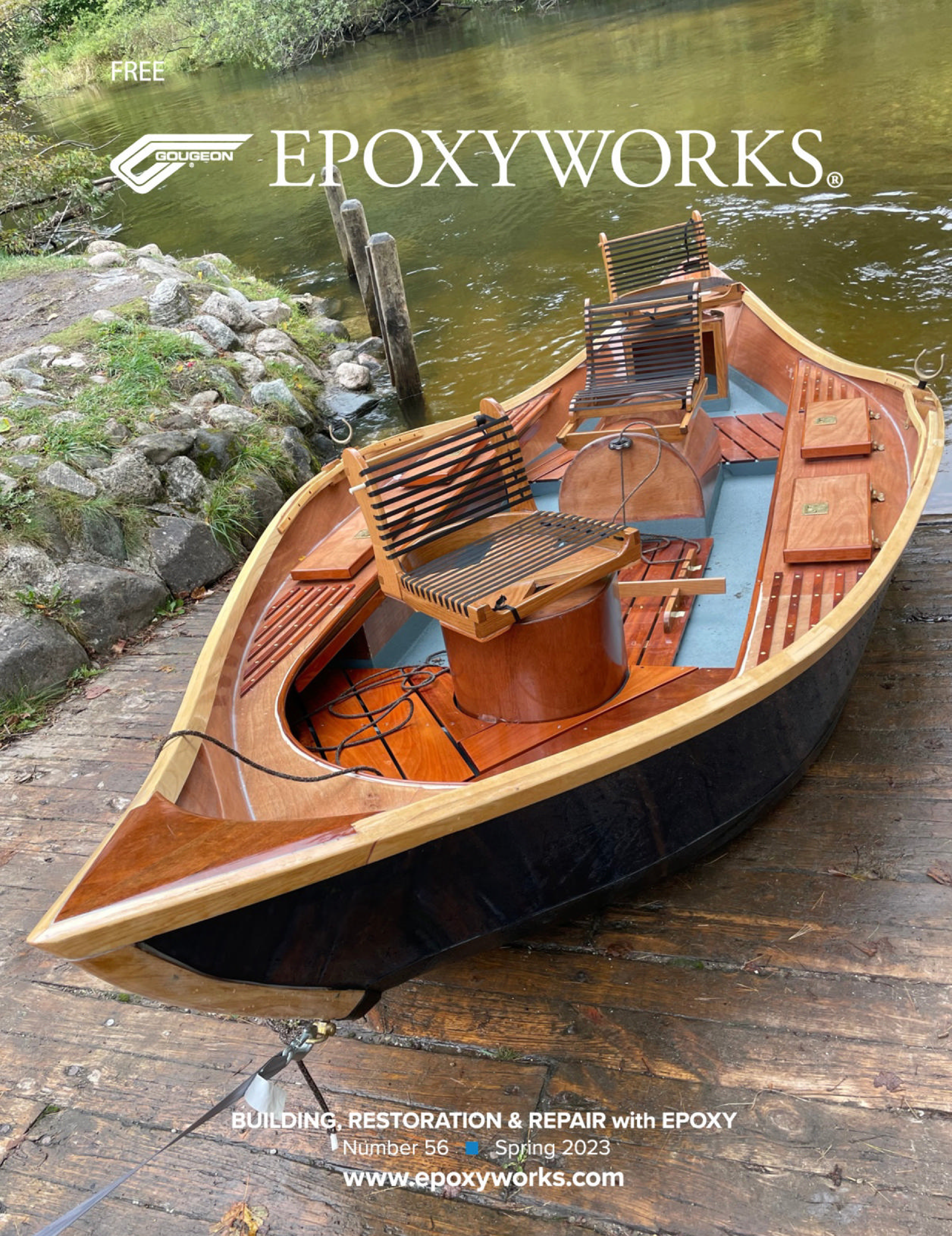

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